Alpha
Consulting Engineers Pte Ltd

PROJECT QUALITY PLAN

PROPOSED CONDOMINIUM DEVELOPMENT AT BEDOK RESERVOIR ROAD COMPRISING 8 BLOCKS OF 15-STOREY RESIDENTIAL FLATS (405 UNITS) WITH BASEMENT CAR PARK, SWIMMING POOL AND ANCILLARY FACILITIES ON LOT 6183V (PT) MK28

For

FCL PEAK PTE LTD

Copy No.	1

Prepared By: Trece Koh

Authorised By: Andrew Loh

Date: 16 February 2011

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
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 – NOT USED
9	**ENVIRONMENTAL CONSIDERATIONS**
9.1	Sustainable Design Features / Criteria
9.2	Site PPE Requirement
9.3	Site Emergency Preparedness – NOT USED
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	6078-PQP File	16 February 2011

1.2 Revision Record

Revision	Date of Issue	Section Reference	Page(s)	Remarks
0	16 May 2008	1 to 10	28	+ 5 pgs (Sect 4.1 – Overall Programme
1	21 June 2010	1 to 11	28	+ 10 pgs (Sect 4.1 – Overall Programme
2	16 February 2011	1 to 11	28	+ 10 pgs (Sect 4.1 – Overall Programme

SECTION 2

PROJECT INFORMATION

2.1 Project Description

Type of Development	Residential/ Condominium

Statistics of Development	
Site Area, m²	19885.00
Nett Floor Area, m²	43898.86
Gross Floor Area, m²	49712.50
Covered Carpark, m²	895.14
No. of Covered Carpark Lots	441
No. of Apartments/Houses	405
No. of Beds (for Hospitals)	-
No. of Guestroom (for Hotels)	-
No. of Blocks / No. of Storeys	8 Blocks/ 15 storeys each
No. of Phases	1

2.2 Project Cost

M&E Services Cost Plan (S$ x 1K)									
Services	EI	ACVI	LEI	FFAI	PSI	SPFI			
Estimate	6,600.00	5,300.00	2,400.00	850.00	5,500.00	350.00			
Awarded	7,128.00	4,446,75	2,100.00	943.80	7,277.80	356.098			

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

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

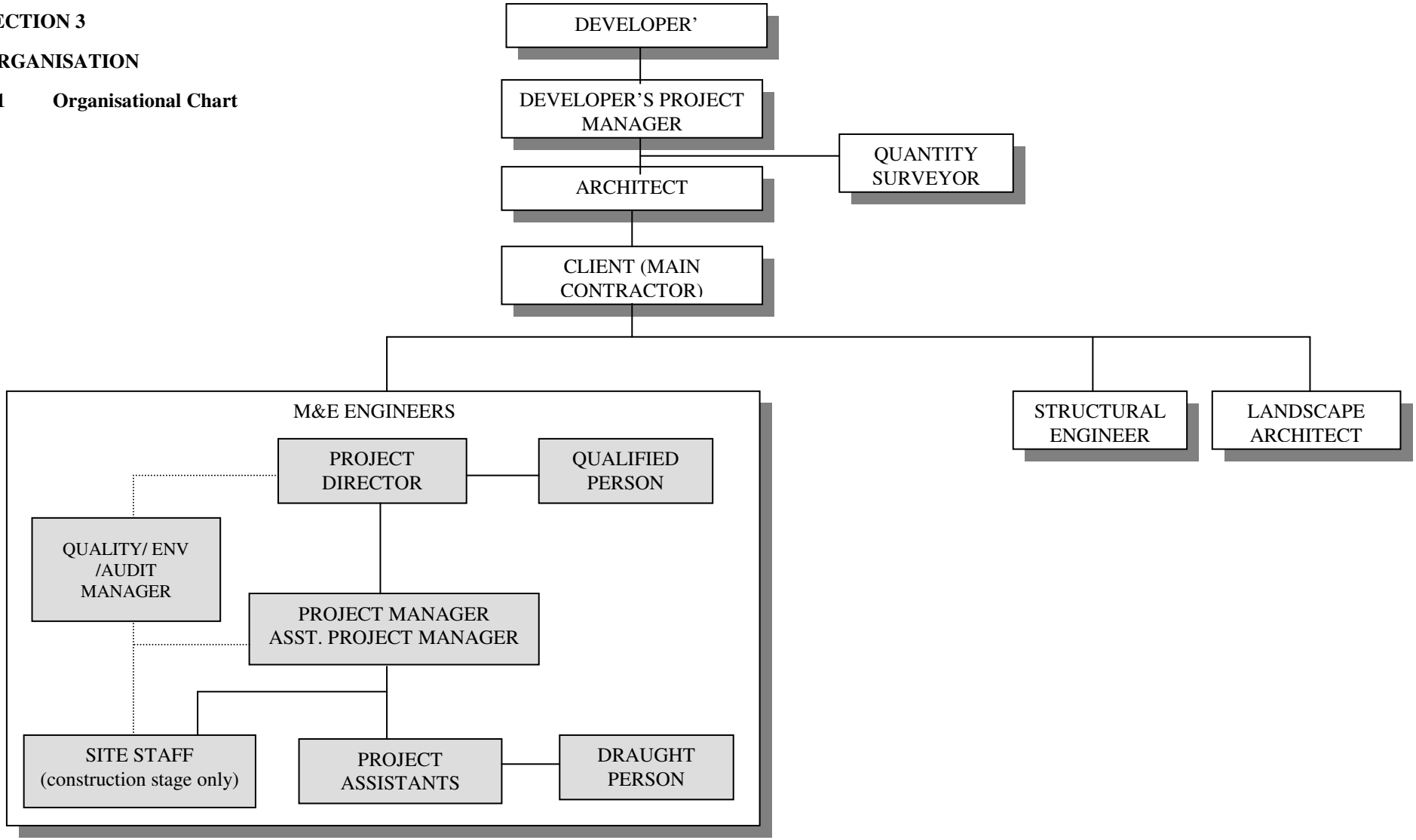
EJECTOR & DIVERTER	✓	SUMP PUMP	✓	FUEL OIL TANK		LIFT & ESCALATOR	✓	PRESSURE VESSEL		HOISTS		FOAM	

(✓*where applicable*)

SECTION 3

ORGANISATION

3.1 Organisational Chart



SECTION 3

ORGANISATION

3.2 ACEPL's Project Team Member

TITLE		NAME
Project Director		Loh Chew Thong (LCT)
Qualified Person	Mechanical	Loh Chew Thong (LCT)
	Electrical	Tan Lai Siong (TLS)
Project Manager		Goh Soon Huat (GSH)
Assistant Project Manager		Chong Lai Meng (CLM)
Project Assistant (Mech)		Tay Heng Chuan (THC)
Project Assistant (Elect)		Trece Koh (TK)
Draughtsperson		Common Pool
Resident Engineer (M&E)		-
Assistant Resident Engineer (M&E)		-
Clerk-of-Work (M&E)		-

3.3 Client/Client's Representatives

Developer:-	FCL Peak Pte Ltd	Client:-	Hytech Builders Pte Ltd
Address:-	438 Alexandra Road #21-00 Alexandra Point Singapore 119958	Address:-	Blk 165 Bukit Merah Central #05-3685/3687 Singapore 150165
Tel:-	6277 2102	Tel:-	6272 0802
Fax:-	6276 6330	Fax:-	6279 6569

Client's Representatives:-

Name of Firm	Contact Person	Contact
FCL Peak Pte Ltd	Name : John Koh Position: Project Manager	Tel: 6277 2102 Fax: 6276 6330 Handphone: - Email: johnkoh@fraserscentrepoint.com
Hytech Builders Pte Ltd	Name: Mr Koh Teng Hua Position: Project Manager	Tel: 62720802 Fax: 62736569 Handphone: 97899336 Email: tenghua@hytec.com.sg
Hytech Builders Pte Ltd	Name: Mr. Yong Kin EE Position: Assistant Project Manager	Tel: 62720802 Fax: 62736569 Handphone: 97899225 Email: yong@hytech.com.sg
Hytech Builders Pte Ltd	Name: Mr. R..Balasubramanian Position: Senior Quantity Surveror	Tel: 62720802 Fax: 62736569 Handphone: 90294693 Email: bala@hytech.com.sg

3.4 **Other Consultants** (Local)

Function / Name of Firm	Contact Person	Contact
Architect DP Architects Pte Ltd	Name: Ms Pauline Sim Position: Architect	Tel: 6828 7886 Fax: 6337 9989 Handphone: 96727147 Email: PaulineSim@dpa.com.sg
Quantity Surveyor KPK quantity Surveyors	Name: Ms Cheok Meen Yee Position: Assistant QS	Tel: 6508 3461 Fax: 6508 3361 Handphone: - Email : meenyee@kpk.com.sg
Structural Engineer Engineers Partnership	Name: Ms Yong Ai Khin Position : Associate	Tel: 6220 0752 Fax: 6224 2073 Handphone: 9735 8188 Email: yongak@epartner.com.sg
Landscape Architect DLQ Design Pte Ltd	Name: Mr. Wong Chee Yuen Position: Designer	Tel: 6738 0171 Fax: 6738 3124 Handphone: - Email: wongcheeyuen@dlqdesign.com
Lighting Consultant Nil	Name: Position:	Tel: Fax: Handphone: - Email:
Acoustic Consultant Nil	Name: Position:	Tel: Fax: Handphone: Email:
_____	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 Firm	Contract *	Contact Person	Contact
Main Contractor Hytech Builders Pte Ltd	D&B Contractor	Name: Mr Koh Teng Hua Position: Project Manager	Tel: 62720802 Fax: 62736569 Handphone: 97899336 Email: tenghua@hytec.com.sg
Main Contractor Hytech Builders Pte Ltd	D&B Contractor	Name: Mr. Eugene Goh Position: M&E Co-ordinator	Tel: 62720802 Fax: 62736569 Handphone: 83706575 Email: eugene_goh@hytech.com.sg
Air Conditioning & Ventilation Installation Sub-Contractor NC (Singapore) Pte Ltd	DSC	Name: Fread Thein Position: Senior Project Engineer	Tel: 6552 1711 Fax: 6552 1611 Handphone: 9451 0453 Email: fread.win@natcool.com
Plumbing & Sanitary Installation Sub-Contractor App Engineering Pte Ltd	DSC	Name: Mr. Sebastian Chia Position: Project Manager	Tel: 6425 6633 Fax: 6425 6636 Handphone: 8484 8838 Email: Sebastian@appengrg.com.sg
Electrical Installation Sub-Contractor United Engineering Pte Ltd	DSC	Name: Mr. Zheng Xin Lin Position: Director	Tel: 68425277 Fax: 68425648 Handphone: 98535678 Email: zheng4040@yahoo.com.sg
Lift & Escalator Installation Sub-Contractor Mitsubishi Elevator (Singapore) Pte Ltd	DSC	Name: Mr Kow Jit Too Position: Project Co-ordinator	Tel: 6842 5678 Fax: 6748 2292 Handphone: 9489 2690 Email: jt.kow@mesp.meap.com
Fire Fighting & Alarm Installation Sub-Contractor App Engineering Pte Ltd	DSC	Name: Mr. Sebastian Chia Position: Project Manager	Tel: 6425 6633 Fax: 6425 6636 Handphone: 8484 8838 Email: Sebastian@appengrg.com.sg
Swimming Pool Filtration Plant Installation Sub-Contractor Hydrotech Pte Ltd	DSC	Name: Mr Bernard S K Tan Position: Project Manager	Tel: 6748 4779 Fax: 6748 8016 Handphone: 97655762 Email: Bernard_hydrotech@yahoo.com.sg
_____		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 Francis Chang See Tong	6823 8555
(b) Diversion	Mr. Umar Bin Hamzah	9423 1725
SP Services:		
(a) Customer Supply	Mr. Liong Chee Wei	68238794
(b) Installation	Mr.William Ng	9681 2882
(c) Meter Section	-	-
(d) Road Lighting	Mr. Chin Chee Wah	63962943
TFCC:		
(a) SCV	Ms Valerie Ang	68256367
(b) SingTel	Mr. Mohd Ghani	63425932/97353186
(c) IDA	Mr Queh Ser Pheng/Tan Huay San	6211 1870
BCA:		
(a) Building Plan	-	-
FSSD:		
(a) Building Plan	-	-
(b) M&E Plan	Mr Ding Tuen Cheng	68481415
PUB (Water Supply) Network Dept:		
(a) Water Conservation	-	-
(b) Plumbing Plan	Ms Wang Qiong	6731 3975
(c) Diversion	Mr. Prathelpa Rajendram/Michael Tan	6731 3553/6380 9805
(d) Connection Pipe	Mr Ambri Bahrom	6380 9825
PUB Water Reclamation (Network) Dept:		
(a) Building Plan/CBPU	-	-
(b) M&E Plan	Mr Abdul Razak Bin Abdul Majid	6731 9527
(c) Diversion	-	-
City Gas Pte Ltd:		
(a) Planning/Submission	Mr Liew Khee Boon	65787603
(b) Installation/Inspection	Mr Ivan Lim Soon Huat	6578 7862/ 9001 9481
PowerGas Pte Ltd		
(a) Diversion	Mr. Tan Li Hong/Ms Rosli Bin Suip	6751 8131/6751 8114
NEA (Pollution Control)		
(a) Planning/Submission	-	-
(b) Inspection	-	-

SECTION 4

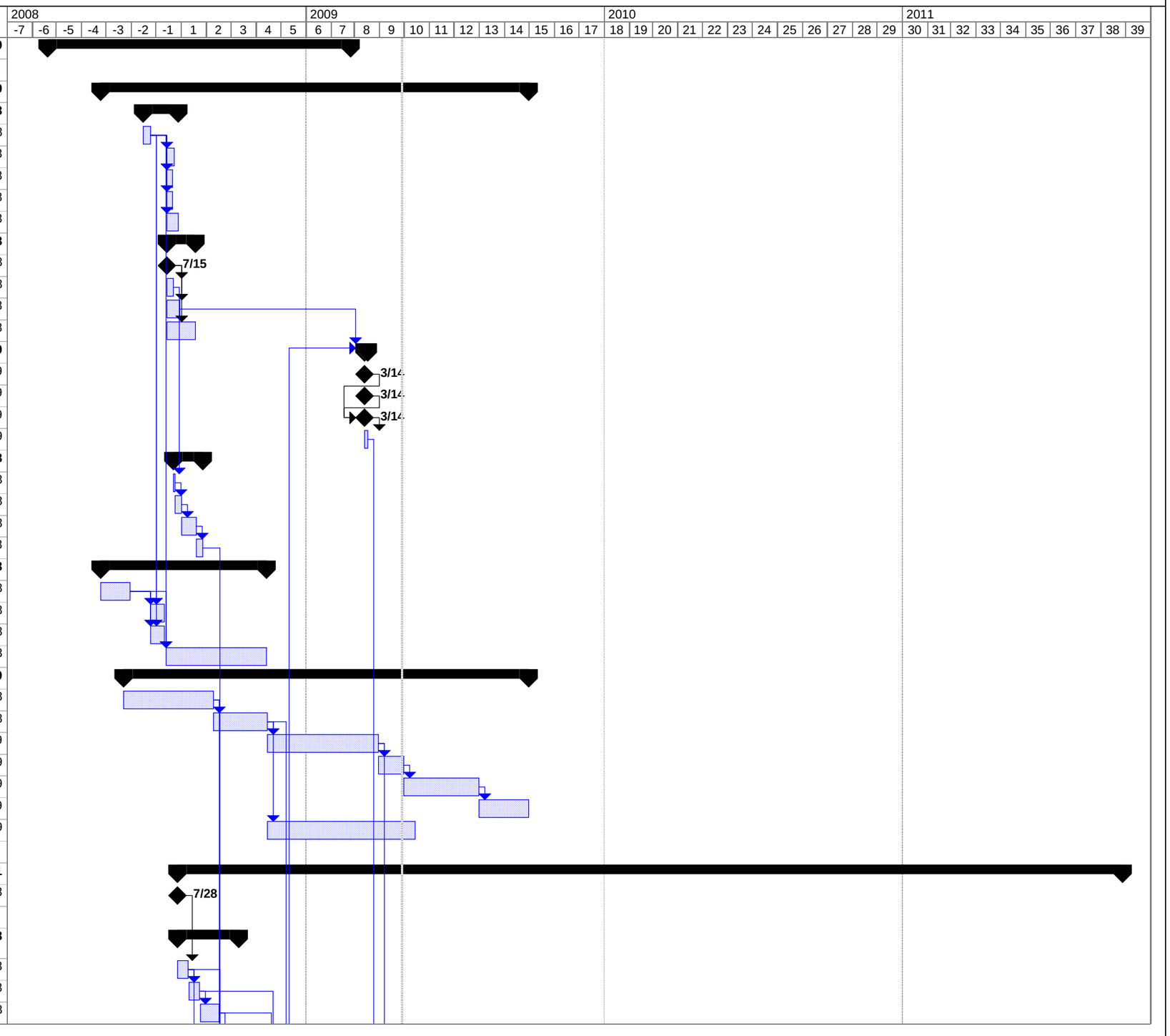
PROGRAMME

4.1 Overall Programme - (Refer to attached Main Contractor 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																									

WATERFRONT WAVES CONDOMINIUM AT BEDOK RESERVOIR ROAD
MASTER PROGRAMME (Revised on 1st April 2009)

ID	Task Name	Duration	Start	Finish
1	**Design Development**	**309 d**	**Wed 2/20/08**	**Tue 2/24/09**
85				
86	**Pre-Construction Activities**	**450 d**	**Fri 4/25/08**	**Wed 9/30/09**
87	**Preparations**	**37 d**	**Mon 6/16/08**	**Mon 7/28/08**
88	Factory Permit	8 d	Mon 6/16/08	Tue 6/24/08
89	Pre-conditions survey	8 d	Tue 7/15/08	Wed 7/23/08
90	Boundary survey	6 d	Tue 7/15/08	Mon 7/21/08
91	Topographic Survey	6 d	Tue 7/15/08	Mon 7/21/08
92	Pre-computation plan	12 d	Tue 7/15/08	Mon 7/28/08
93	**Setting-up & Mobilization**	**30 d**	**Tue 7/15/08**	**Mon 8/18/08**
94	Taken site possession	0 d	Tue 7/15/08	Tue 7/15/08
95	Mobilization	7 d	Tue 7/15/08	Tue 7/22/08
96	Hoardings, gates, Site entrance, etc.	14 d	Tue 7/15/08	Wed 7/30/08
97	Erosion Control Measures	30 d	Tue 7/15/08	Mon 8/18/08
98	**Construct Site Entrance 2**	**3 d**	**Sat 3/14/09**	**Tue 3/17/09**
99	Existing Show Flat - Ceased operation	0 d	Sat 3/14/09	Sat 3/14/09
100	Existing Sewer line - Ceased operation	0 d	Sat 3/14/09	Sat 3/14/09
101	Shifting of Guard house & Washbay	0 d	Sat 3/14/09	Sat 3/14/09
102	Demolition of exsiting Site Entrance	3 d	Sat 3/14/09	Tue 3/17/09
103	**Preliminary test pile (ULT)**	**31 d**	**Wed 7/23/08**	**Wed 8/27/08**
104	Pile installation	2 d	Wed 7/23/08	Thu 7/24/08
105	Concrete curing & preparation	7 d	Fri 7/25/08	Fri 8/1/08
106	Load test	15 d	Sat 8/2/08	Tue 8/19/08
107	Test report & approval	7 d	Wed 8/20/08	Wed 8/27/08
108	**Minor Sewer Works**	**174 d**	**Fri 4/25/08**	**Thu 11/13/08**
109	Obtain Clearance Certificate & Approval	30 d	Fri 4/25/08	Fri 5/30/08
110	Pre-conditions survey	15 d	Wed 6/25/08	Fri 7/11/08
111	Underground Cable Detection	15 d	Wed 6/25/08	Fri 7/11/08
112	Minor Sewer Works; completion & handing ov	107 d	Mon 7/14/08	Thu 11/13/08
113	**Permit to Commence Structure Works**	**427 d**	**Fri 5/23/08**	**Wed 9/30/09**
114	ST01 - Piling & Pile Caps works	95 d	Fri 5/23/08	Tue 9/9/08
115	ST02 - Substructure (Baesment) works	57 d	Wed 9/10/08	Fri 11/14/08
116	ST03 - Superstructure (1st-14th Sty) works	117 d	Sat 11/15/08	Mon 3/30/09
117	ST04 - Electrical Substation	27 d	Tue 3/31/09	Thu 4/30/09
118	ST05 - Pools and E-Decks	79 d	Fri 5/1/09	Fri 7/31/09
119	ST06 - Superstructure (15th sty & Roof)	52 d	Sat 8/1/09	Wed 9/30/09
120	SW18 - Roads,drainage,traffic,lightings,etc.	156 d	Sat 11/15/08	Thu 5/14/09
121				
122	**Construction Activites**	**993 d**	**Mon 7/28/08**	**Tue 9/27/11**
123	Commencement work	0 d	Mon 7/28/08	Mon 7/28/08
124				
125	**Overall site Excavation and site access preparation for Piling works**	**66 d**	**Mon 7/28/08**	**Fri 10/10/08**
126	Tower 4 & Basement area	12 d	Mon 7/28/08	Sat 8/9/08
127	Tower 1 & Basement area	12 d	Mon 8/11/08	Sat 8/23/08
128	Tower 8 & Basement area	21 d	Mon 8/25/08	Tue 9/16/08

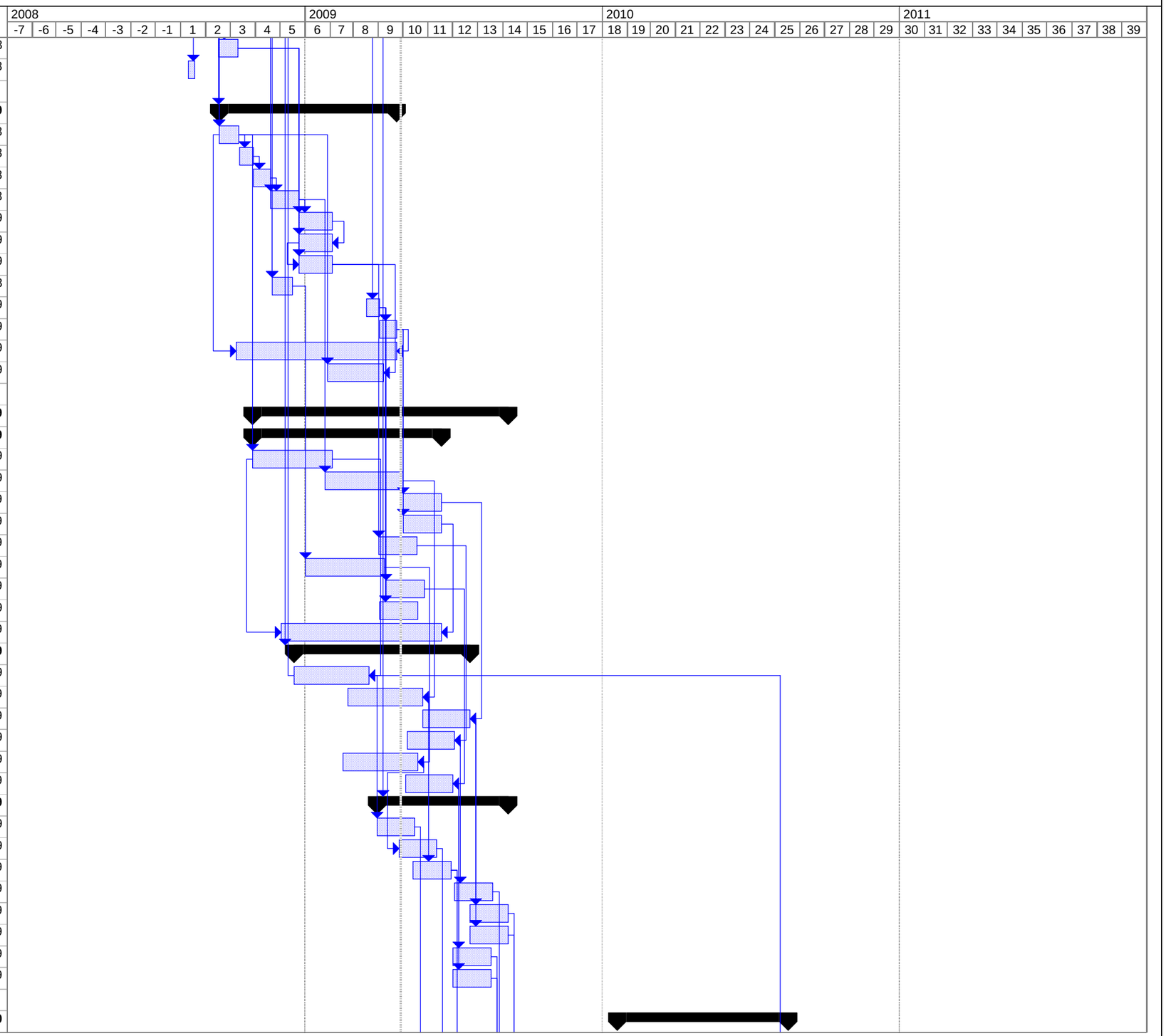


Project: Waterfront waves Condominiu
Date: 1 April 2009 (Revision 2)

Task | Progress | Milestone | Summary | Project Summary

WATERFRONT WAVES CONDOMINIUM AT BEDOK RESERVOIR ROAD
MASTER PROGRAMME (Revised on 1st April 2009)

ID	Task Name	Duration	Start	Finish
129	Tower 5, 6, 7 & Basement area	21 d	Wed 9/17/08	Fri 10/10/08
130	Tower 2, 3 & Basement area	7 d	Mon 8/11/08	Mon 8/18/08
131				
132	**Piling Works (Total: 912 piles)**	**188 d**	**Thu 9/18/08**	**Thu 4/23/09**
133	Tower 4 (83 piles)	21 d	Thu 9/18/08	Sat 10/11/08
134	Tower 3 (43 piles)	15 d	Mon 10/13/08	Wed 10/29/08
135	Tower 2 (53 piles)	18 d	Thu 10/30/08	Wed 11/19/08
136	Tower 8 (87 piles)	30 d	Thu 11/20/08	Wed 12/24/08
137	Tower 7 (57 piles)	35 d	Thu 12/25/08	Tue 2/3/09
138	Tower 6 (65 piles)	35 d	Thu 12/25/08	Tue 2/3/09
139	Tower 5 (82 piles)	35 d	Thu 12/25/08	Tue 2/3/09
140	Tower 1 (89 piles)	21 d	Sat 11/22/08	Tue 12/16/08
141	Tower 2 & 3 (14+23 piles at site access)	14 d	Wed 3/18/09	Thu 4/2/09
142	Tower 6 & 7 (15+9 piles at existing Sewer line	18 d	Fri 4/3/09	Thu 4/23/09
143	E-Deck & Basement area (292 piles)	170 d	Thu 10/9/08	Thu 4/23/09
144	WLT (8 nos.)	60 d	Thu 1/29/09	Tue 4/7/09
145				
146	**Basement and 1st storey Slabs**	**270 d**	**Wed 10/29/08**	**Mon 9/7/09**
147	**Pile Caps (Total 567 nos.)**	**200 d**	**Wed 10/29/08**	**Wed 6/17/09**
148	Tower 4 (40 nos.)	84 d	Wed 10/29/08	Tue 2/3/09
149	Tower 8 (38 nos.)	84 d	Mon 1/26/09	Fri 5/1/09
150	Tower 7 (32 nos.)	40 d	Sat 5/2/09	Wed 6/17/09
151	Tower 6 (40 nos.)	40 d	Sat 5/2/09	Wed 6/17/09
152	Tower 5 (39 nos.)	40 d	Thu 4/2/09	Mon 5/18/09
153	Tower 1 (38 nos.)	84 d	Fri 1/2/09	Wed 4/8/09
154	Tower 2 (32 nos.)	40 d	Sat 4/11/09	Wed 5/27/09
155	Tower 3 (33 nos.)	40 d	Fri 4/3/09	Tue 5/19/09
156	Basement Areas (170 nos.)	170 d	Wed 12/3/08	Wed 6/17/09
157	**Basement slab**	**186 d**	**Fri 12/19/08**	**Wed 7/22/09**
158	Tower 4 & Basement areas	80 d	Fri 12/19/08	Fri 3/20/09
159	Tower 8 & Basment areas	80 d	Mon 2/23/09	Mon 5/25/09
160	Tower 6, 7 & Basement areas	50 d	Tue 5/26/09	Wed 7/22/09
161	Tower 5 & Basement areas	50 d	Thu 5/7/09	Fri 7/3/09
162	Tower 1 & Basement areas	80 d	Tue 2/17/09	Tue 5/19/09
163	Tower 2, 3 & Basement Slab	50 d	Tue 5/5/09	Wed 7/1/09
164	**1st storey slab & Part of E Deck**	**138 d**	**Tue 3/31/09**	**Mon 9/7/09**
165	Tower 4	40 d	Tue 3/31/09	Fri 5/15/09
166	Tower 1	40 d	Mon 4/27/09	Thu 6/11/09
167	Tower 8	40 d	Thu 5/14/09	Mon 6/29/09
168	Tower 5	40 d	Sat 7/4/09	Wed 8/19/09
169	Tower 6	40 d	Thu 7/23/09	Mon 9/7/09
170	Tower 7	40 d	Thu 7/23/09	Mon 9/7/09
171	Tower 2	40 d	Thu 7/2/09	Mon 8/17/09
172	Tower 3	40 d	Thu 7/2/09	Mon 8/17/09
173				
174	**Remaining Basement Areas**	**180 d**	**Wed 1/20/10**	**Tue 8/17/10**

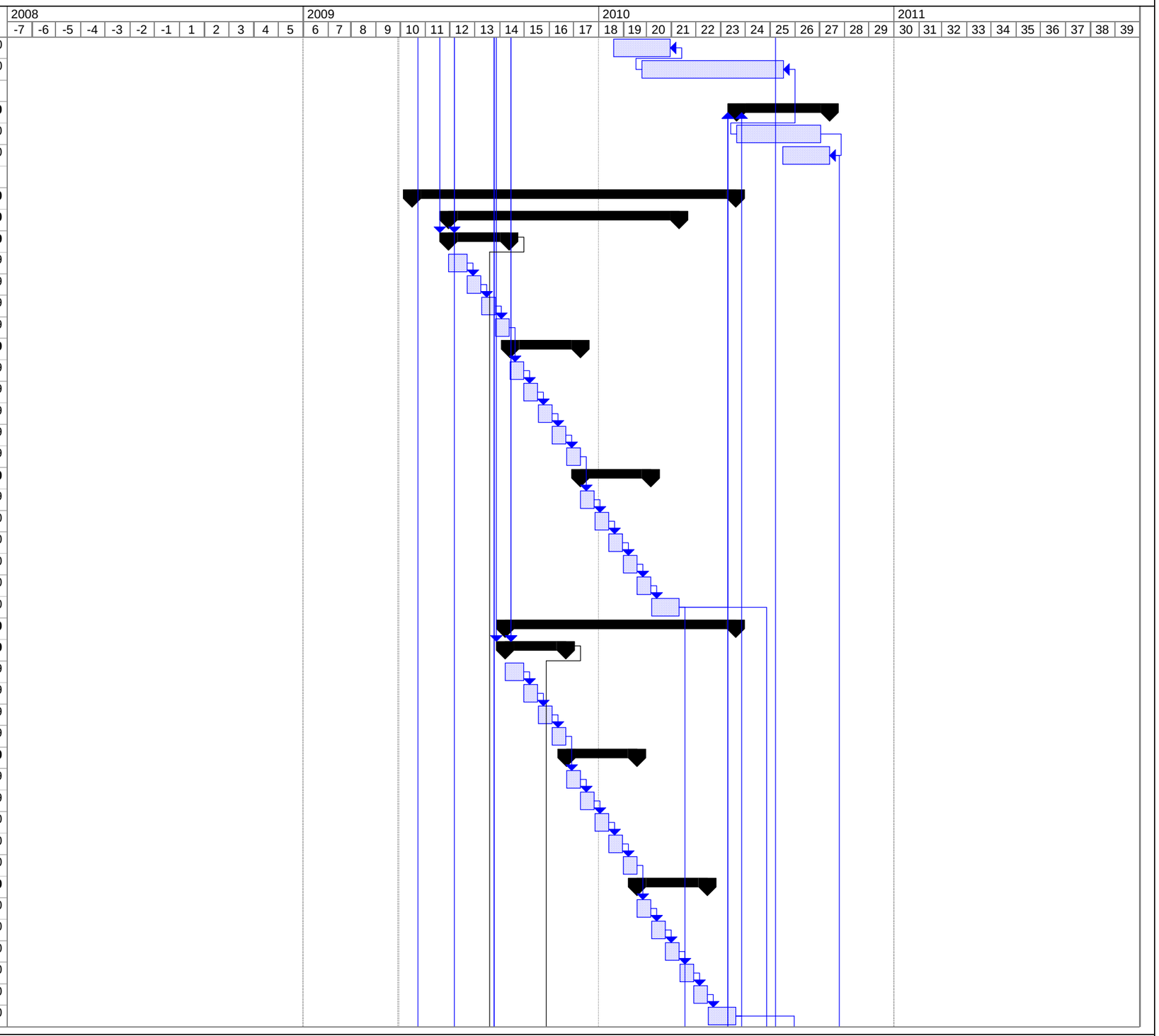


Project: Waterfront waves Condominiu
Date: 1 April 2009 (Revision 2)

Task | Progress | Milestone | Summary | Project Summary

WATERFRONT WAVES CONDOMINIUM AT BEDOK RESERVOIR ROAD
MASTER PROGRAMME (Revised on 1st April 2009)

ID	Task Name	Duration	Start	Finish
175	Basement Pile caps (102 nos.)	60 d	Wed 1/20/10	Tue 3/30/10
176	Basement Slab	150 d	Wed 2/24/10	Tue 8/17/10
177				
178	**Landscape deck Structure (remaining)**	**99 d**	**Mon 6/21/10**	**Wed 10/13/10**
179	E Deck Slab	90 d	Mon 6/21/10	Sat 10/2/10
180	Club House Sturcture; etc	50 d	Tue 8/17/10	Wed 10/13/10
181				
182	**Superstructure Works**	**343 d**	**Sat 5/16/09**	**Sat 6/19/10**
183	**Tower 1 and 8**	**245 d**	**Tue 6/30/09**	**Sat 4/10/10**
184	**2nd sty ~ 5th sty**	**65 d**	**Tue 6/30/09**	**Sat 9/12/09**
185	2nd sty	20 d	Tue 6/30/09	Wed 7/22/09
186	3rd sty	15 d	Thu 7/23/09	Sat 8/8/09
187	4th sty	15 d	Mon 8/10/09	Wed 8/26/09
188	5th sty	15 d	Thu 8/27/09	Sat 9/12/09
189	**6th sty ~ 10th sty**	**75 d**	**Mon 9/14/09**	**Wed 12/9/09**
190	6th sty	15 d	Mon 9/14/09	Wed 9/30/09
191	7th sty	15 d	Thu 10/1/09	Sat 10/17/09
192	8th sty	15 d	Mon 10/19/09	Wed 11/4/09
193	9th sty	15 d	Thu 11/5/09	Sat 11/21/09
194	10th sty	15 d	Mon 11/23/09	Wed 12/9/09
195	**11th sty ~ 15th sty**	**75 d**	**Thu 12/10/09**	**Sat 3/6/10**
196	11th sty	15 d	Thu 12/10/09	Sat 12/26/09
197	12th sty	15 d	Mon 12/28/09	Wed 1/13/10
198	13th sty	15 d	Thu 1/14/10	Sat 1/30/10
199	14th sty	15 d	Mon 2/1/10	Wed 2/17/10
200	15th sty	15 d	Thu 2/18/10	Sat 3/6/10
201	**Roof**	30 d	Mon 3/8/10	Sat 4/10/10
202	**Tower 5, 6, 7**	**245 d**	**Tue 9/8/09**	**Sat 6/19/10**
203	**2nd sty ~ 5th sty**	**65 d**	**Tue 9/8/09**	**Sat 11/21/09**
204	2nd sty	20 d	Tue 9/8/09	Wed 9/30/09
205	3rd sty	15 d	Thu 10/1/09	Sat 10/17/09
206	4th sty	15 d	Mon 10/19/09	Wed 11/4/09
207	5th sty	15 d	Thu 11/5/09	Sat 11/21/09
208	**6th sty ~ 10th sty**	**75 d**	**Mon 11/23/09**	**Wed 2/17/10**
209	6th sty	15 d	Mon 11/23/09	Wed 12/9/09
210	7th sty	15 d	Thu 12/10/09	Sat 12/26/09
211	8th sty	15 d	Mon 12/28/09	Wed 1/13/10
212	9th sty	15 d	Thu 1/14/10	Sat 1/30/10
213	10th sty	15 d	Mon 2/1/10	Wed 2/17/10
214	**11th sty ~ 15th sty**	**75 d**	**Thu 2/18/10**	**Sat 5/15/10**
215	11th sty	15 d	Thu 2/18/10	Sat 3/6/10
216	12th sty	15 d	Mon 3/8/10	Wed 3/24/10
217	13th sty	15 d	Thu 3/25/10	Sat 4/10/10
218	14th sty	15 d	Mon 4/12/10	Wed 4/28/10
219	15th sty	15 d	Thu 4/29/10	Sat 5/15/10
220	Roof	30 d	Mon 5/17/10	Sat 6/19/10

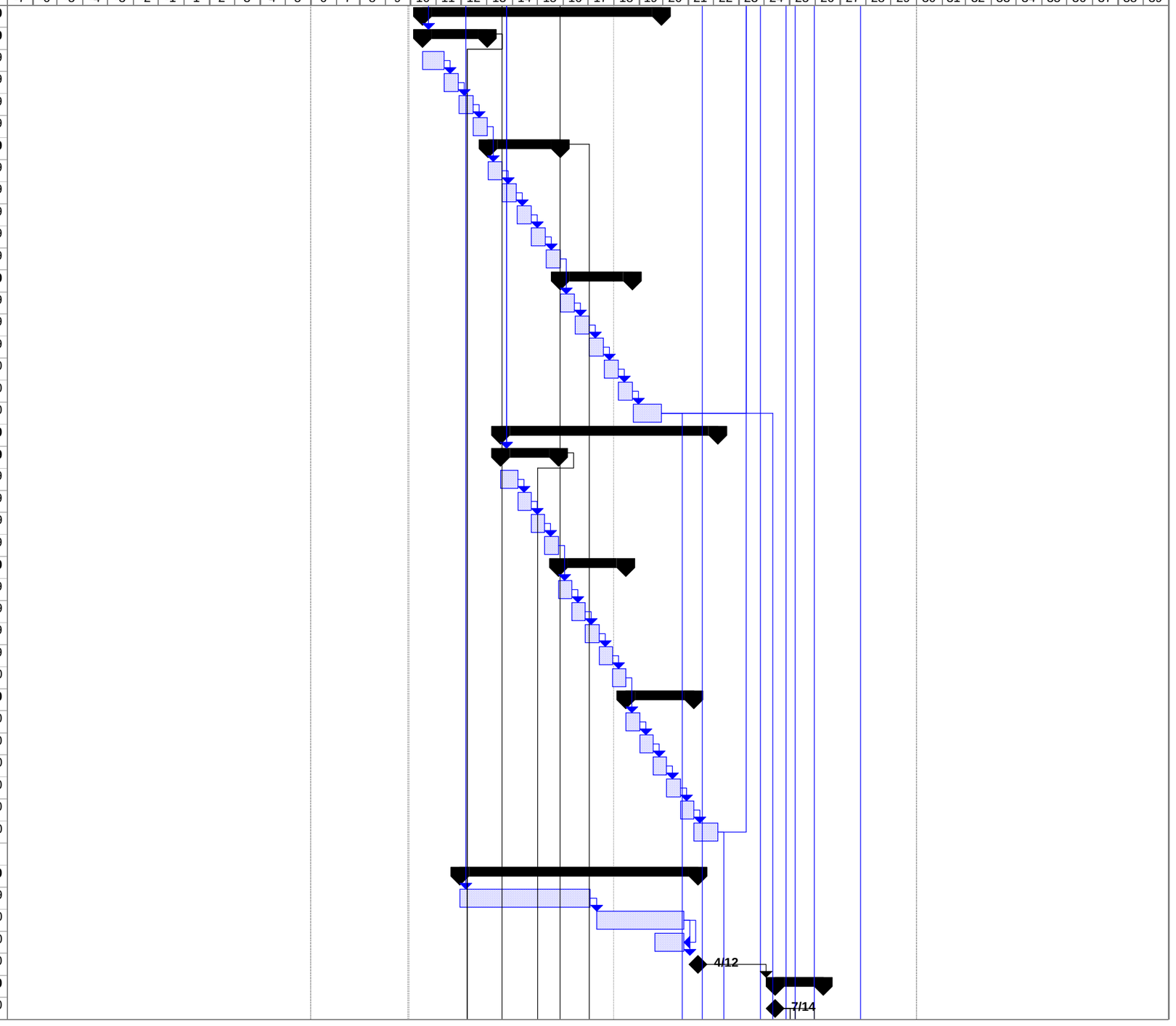


Project: Waterfront waves Condominiu
Date: 1 April 2009 (Revision 2)

Task | Progress | Milestone | Summary | Project Summary

WATERFRONT WAVES CONDOMINIUM AT BEDOK RESERVOIR ROAD
MASTER PROGRAMME (Revised on 1st April 2009)

ID	Task Name	Duration	Start	Finish
221	**Tower 4**	**247 d**	**Sat 5/16/09**	**Sat 2/27/10**
222	**2nd sty ~ 5th sty**	**67 d**	**Sat 5/16/09**	**Sat 8/1/09**
223	2nd sty	22 d	Sat 5/16/09	Wed 6/10/09
224	3rd sty	15 d	Thu 6/11/09	Sat 6/27/09
225	4th sty	15 d	Mon 6/29/09	Wed 7/15/09
226	5th sty	15 d	Thu 7/16/09	Sat 8/1/09
227	**6th sty ~ 10th sty**	**75 d**	**Mon 8/3/09**	**Wed 10/28/09**
228	6th sty	15 d	Mon 8/3/09	Wed 8/19/09
229	7th sty	15 d	Thu 8/20/09	Sat 9/5/09
230	8th sty	15 d	Mon 9/7/09	Wed 9/23/09
231	9th sty	15 d	Thu 9/24/09	Sat 10/10/09
232	10th sty	15 d	Mon 10/12/09	Wed 10/28/09
233	**11th sty ~ 15th sty**	**75 d**	**Thu 10/29/09**	**Sat 1/23/10**
234	11th sty	15 d	Thu 10/29/09	Sat 11/14/09
235	12th sty	15 d	Mon 11/16/09	Wed 12/2/09
236	13th sty	15 d	Thu 12/3/09	Sat 12/19/09
237	14th sty	15 d	Mon 12/21/09	Wed 1/6/10
238	15th sty	15 d	Thu 1/7/10	Sat 1/23/10
239	**Roof**	30 d	Mon 1/25/10	Sat 2/27/10
240	**Tower 2 & 3**	**225 d**	**Tue 8/18/09**	**Thu 5/6/10**
241	**2nd sty ~ 5th sty**	**60 d**	**Tue 8/18/09**	**Mon 10/26/09**
242	2nd sty	18 d	Tue 8/18/09	Mon 9/7/09
243	3rd sty	14 d	Tue 9/8/09	Wed 9/23/09
244	4th sty	14 d	Thu 9/24/09	Fri 10/9/09
245	5th sty	14 d	Sat 10/10/09	Mon 10/26/09
246	**6th sty ~ 10th sty**	**70 d**	**Tue 10/27/09**	**Fri 1/15/10**
247	6th sty	14 d	Tue 10/27/09	Wed 11/11/09
248	7th sty	14 d	Thu 11/12/09	Fri 11/27/09
249	8th sty	14 d	Sat 11/28/09	Mon 12/14/09
250	9th sty	14 d	Tue 12/15/09	Wed 12/30/09
251	10th sty	14 d	Thu 12/31/09	Fri 1/15/10
252	**11th sty ~ 15th sty**	**70 d**	**Sat 1/16/10**	**Wed 4/7/10**
253	11th sty	14 d	Sat 1/16/10	Mon 2/1/10
254	12th sty	14 d	Tue 2/2/10	Wed 2/17/10
255	13th sty	14 d	Thu 2/18/10	Fri 3/5/10
256	14th sty	14 d	Sat 3/6/10	Mon 3/22/10
257	15th sty	14 d	Tue 3/23/10	Wed 4/7/10
258	**Roof**	25 d	Thu 4/8/10	Thu 5/6/10
259				
260	**Substation**	**246 d**	**Tue 6/30/09**	**Mon 4/12/10**
261	Structure works	135 d	Tue 6/30/09	Thu 12/3/09
262	Finishing works	90 d	Sat 12/12/09	Fri 3/26/10
263	Lead-in pipes	30 d	Sat 2/20/10	Fri 3/26/10
264	Handover to PowerGrid	0 d	Mon 4/12/10	Mon 4/12/10
265	**Electricity Power Turn-on**	**50 d**	**Wed 7/14/10**	**Fri 9/10/10**
266	Power Turn-on to Consumer Switchroom	0 d	Wed 7/14/10	Wed 7/14/10

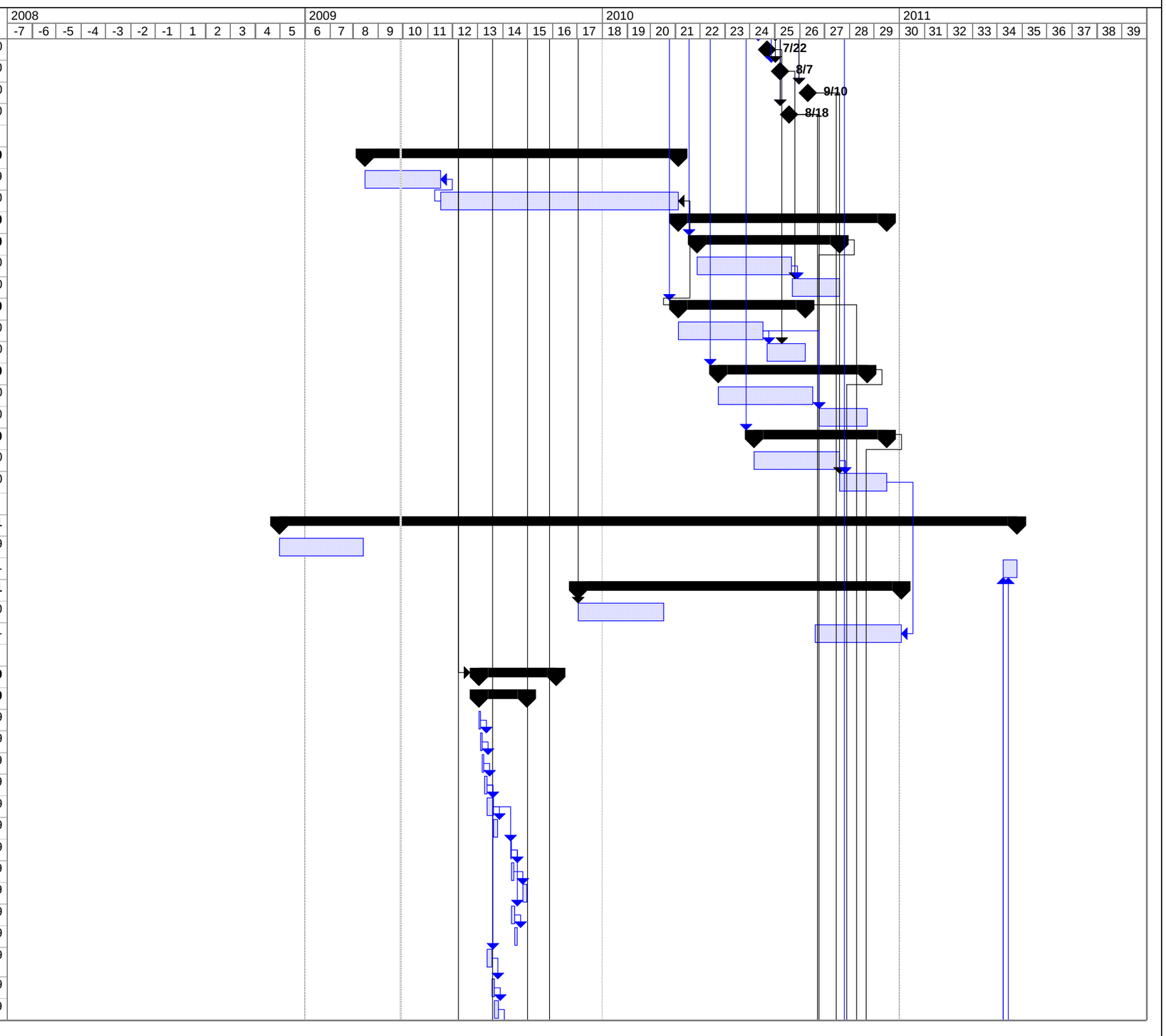


Project: Waterfront waves Condominiu
Date: 1 April 2009 (Revision 2)

Task | Progress | Milestone | Summary | Project Summary

WATERFRONT WAVES CONDOMINIUM AT BEDOK RESERVOIR ROAD
MASTER PROGRAMME (Revised on 1st April 2009)

ID	Task Name	Duration	Start	Finish
267	Power Turn-on to Blk 4 Risers	0 d	Thu 7/22/10	Thu 7/22/10
268	Power Turn-on to Blk 1 and 8 Risers	0 d	Sat 8/7/10	Sat 8/7/10
269	Power Turn-on to Blk 5,6 and 7 Risers	0 d	Fri 9/10/10	Fri 9/10/10
270	Power Turn-on to Blk 2 and 3 Risers	0 d	Wed 8/18/10	Wed 8/18/10
271				
272	**Lift Submission & Fabrication**	**330 d**	**Mon 3/16/09**	**Mon 4/5/10**
273	Shop-drawing preparation & approval	80 d	Mon 3/16/09	Wed 6/17/09
274	Factory Fabrication & delivery	250 d	Wed 6/17/09	Mon 4/5/10
275	**Lift installation, T & C**	**220 d**	**Mon 4/5/10**	**Thu 12/16/10**
276	**Tower 1 and 8**	**150 d**	**Wed 4/28/10**	**Tue 10/19/10**
277	Installation	100 d	Wed 4/28/10	Sat 8/21/10
278	T & C	50 d	Mon 8/23/10	Tue 10/19/10
279	**Tower 4**	**134 d**	**Mon 4/5/10**	**Tue 9/7/10**
280	Installation	90 d	Mon 4/5/10	Sat 7/17/10
281	T & C	40 d	Fri 7/23/10	Tue 9/7/10
282	**Tower 2 & 3**	**157 d**	**Mon 5/24/10**	**Mon 11/22/10**
283	Installation	100 d	Mon 5/24/10	Thu 9/16/10
284	T & C	50 d	Sat 9/25/10	Mon 11/22/10
285	**Tower 5, 6 & 7**	**140 d**	**Wed 7/7/10**	**Thu 12/16/10**
286	Installation	90 d	Wed 7/7/10	Tue 10/19/10
287	T & C	50 d	Wed 10/20/10	Thu 12/16/10
288				
289	**Tower Cranes (4 units)**	**777 d**	**Mon 12/1/08**	**Wed 5/25/11**
290	Erect	90 d	Mon 12/1/08	Fri 3/13/09
291	Dismantle	15 d	Mon 5/9/11	Wed 5/25/11
292	**Passenger Hoists (8 units)**	**339 d**	**Thu 12/3/09**	**Mon 1/3/11**
293	Erect	90 d	Thu 12/3/09	Wed 3/17/10
294	Dismantle	90 d	Mon 9/20/10	Mon 1/3/11
295				
296	**Mock-up Unit Work Sequence**	**82 d**	**Mon 8/3/09**	**Thu 11/5/09**
297	**Finishing Audit 1**	**51 d**	**Mon 8/3/09**	**Wed 9/30/09**
298	Bricklaying	2 d	Mon 8/3/09	Tue 8/4/09
299	Ceiling Skim Coat	2 d	Wed 8/5/09	Thu 8/6/09
300	Window & Door Sub Frame Installation	2 d	Fri 8/7/09	Sat 8/8/09
301	M & E Conceal Services	3 d	Mon 8/10/09	Wed 8/12/09
302	Internal Plastering - base coat & top coat	7 d	Thu 8/13/09	Thu 8/20/09
303	Floor Screed To Receive Tile/Parquet	4 d	Fri 8/21/09	Tue 8/25/09
304	Internal Painting - Sealer Coat (3 week a	1 d	Fri 9/11/09	Fri 9/11/09
305	Timber Parquet Laying	2 d	Sat 9/12/09	Mon 9/14/09
306	Timber Parquet 1st Grinding	4 d	Sat 9/26/09	Wed 9/30/09
307	Balcony Glass Balustrade Fixing	3 d	Sat 9/12/09	Tue 9/15/09
308	Floor Tiling To Living Room	3 d	Wed 9/16/09	Fri 9/18/09
309	Toilet waterproofing - preparation, 1st coat, 2nd coat & water ponding	5 d	Thu 8/13/09	Tue 8/18/09
310	Toilet M & E Basin & AC Condesate Drai	3 d	Wed 8/19/09	Fri 8/21/09
311	Toilet Wall & Floor Screed To Receive Ti	4 d	Sat 8/22/09	Wed 8/26/09

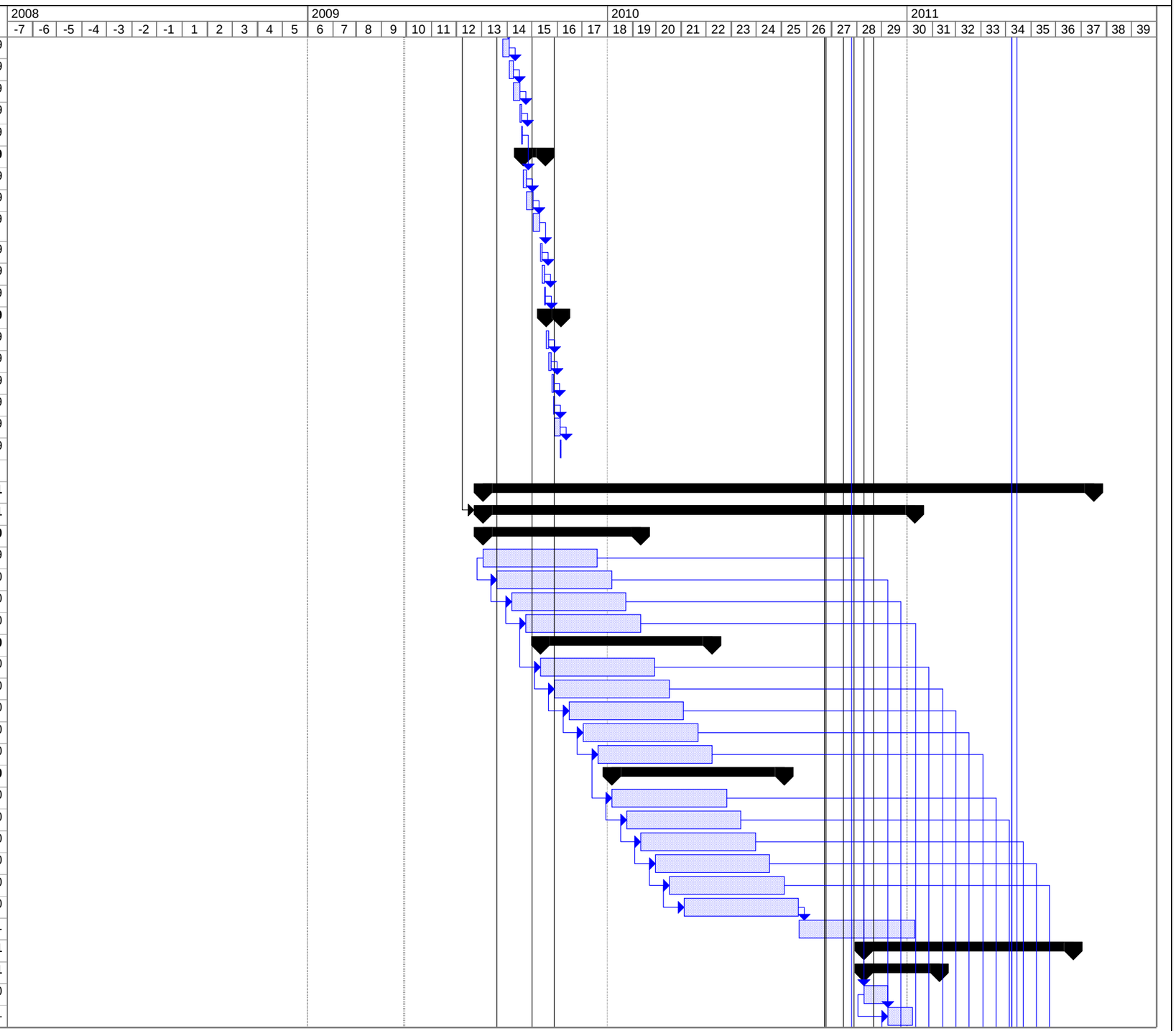


Project: Waterfront waves Condominiu
Date: 1 April 2009 (Revision 2)

Task | Progress | Milestone | Summary | Project Summary

WATERFRONT WAVES CONDOMINIUM AT BEDOK RESERVOIR ROAD
MASTER PROGRAMME (Revised on 1st April 2009)

ID	Task Name	Duration	Start	Finish
312	Toilet Wall Tile Laying	7 d	Thu 8/27/09	Thu 9/3/09
313	Toilet False Ceiling Works	4 d	Fri 9/4/09	Tue 9/8/09
314	Toilet Floor Tile Laying	7 d	Wed 9/9/09	Wed 9/16/09
315	Long Bath Fixing	2 d	Thu 9/17/09	Fri 9/18/09
316	**FA 1**	1 d	Sat 9/19/09	Sat 9/19/09
317	**Finishing Audit 2**	**24 d**	**Mon 9/21/09**	**Sat 10/17/09**
318	Wardrobe & Kitchen Carcasses	4 d	Mon 9/21/09	Thu 9/24/09
319	Parquet Final Grinding - undercoat & 1st	7 d	Fri 9/25/09	Fri 10/2/09
320	Wardrobe & Kitchen Cabinet, Vanity Top, Shower screen & Mirror fixing	7 d	Sat 10/3/09	Sat 10/10/09
321	WC & Basin Fixing, Elect DB	2 d	Mon 10/12/09	Tue 10/13/09
322	Internal Painting 2nd coat	3 d	Wed 10/14/09	Fri 10/16/09
323	**FA 2**	1 d	Sat 10/17/09	Sat 10/17/09
324	**Finishing Audit 3**	**16 d**	**Mon 10/19/09**	**Thu 11/5/09**
325	Main Door Panels & Ironmongery Installa	3 d	Mon 10/19/09	Wed 10/21/09
326	Waedrobe and Cabinet doors and Acces	3 d	Thu 10/22/09	Sat 10/24/09
327	Electrical Final Fittings	2 d	Mon 10/26/09	Tue 10/27/09
328	Kitchen Appliances & Bathrooms Access	1 d	Wed 10/28/09	Wed 10/28/09
329	Final Coat Painting & Parquet Vanishing	6 d	Thu 10/29/09	Wed 11/4/09
330	**FA 3**	1 d	Thu 11/5/09	Thu 11/5/09
331				
332	**Building Internal Finishes**	**637 d**	**Mon 8/3/09**	**Tue 8/16/11**
333	**Tower 4 (FA 1 & FA 2)**	**450 d**	**Mon 8/3/09**	**Mon 1/10/11**
334	**2nd sty ~ 5th sty**	**165 d**	**Mon 8/3/09**	**Wed 2/10/10**
335	2nd sty	120 d	Mon 8/3/09	Sat 12/19/09
336	3rd sty	120 d	Thu 8/20/09	Wed 1/6/10
337	4th sty	120 d	Mon 9/7/09	Sat 1/23/10
338	5th sty	120 d	Thu 9/24/09	Wed 2/10/10
339	**6th sty ~ 10th sty**	**180 d**	**Mon 10/12/09**	**Sat 5/8/10**
340	6th sty	120 d	Mon 10/12/09	Sat 2/27/10
341	7th sty	120 d	Thu 10/29/09	Wed 3/17/10
342	8th sty	120 d	Mon 11/16/09	Sat 4/3/10
343	9th sty	120 d	Thu 12/3/09	Wed 4/21/10
344	10th sty	120 d	Mon 12/21/09	Sat 5/8/10
345	**11th sty ~ 15th sty**	**180 d**	**Thu 1/7/10**	**Wed 8/4/10**
346	11th sty	120 d	Thu 1/7/10	Wed 5/26/10
347	12th sty	120 d	Mon 1/25/10	Sat 6/12/10
348	13th sty	120 d	Thu 2/11/10	Wed 6/30/10
349	14th sty	120 d	Mon 3/1/10	Sat 7/17/10
350	15th sty	120 d	Thu 3/18/10	Wed 8/4/10
351	**Roof**	120 d	Mon 4/5/10	Sat 8/21/10
352	**1st storey**	120 d	Mon 8/23/10	Mon 1/10/11
353	**Tower 4 (FA 3)**	**218 d**	**Wed 11/10/10**	**Fri 7/22/11**
354	**2nd sty ~ 5th sty**	**78 d**	**Wed 11/10/10**	**Wed 2/9/11**
355	2nd sty	25 d	Wed 11/10/10	Wed 12/8/10
356	3rd sty	25 d	Thu 12/9/10	Fri 1/7/11

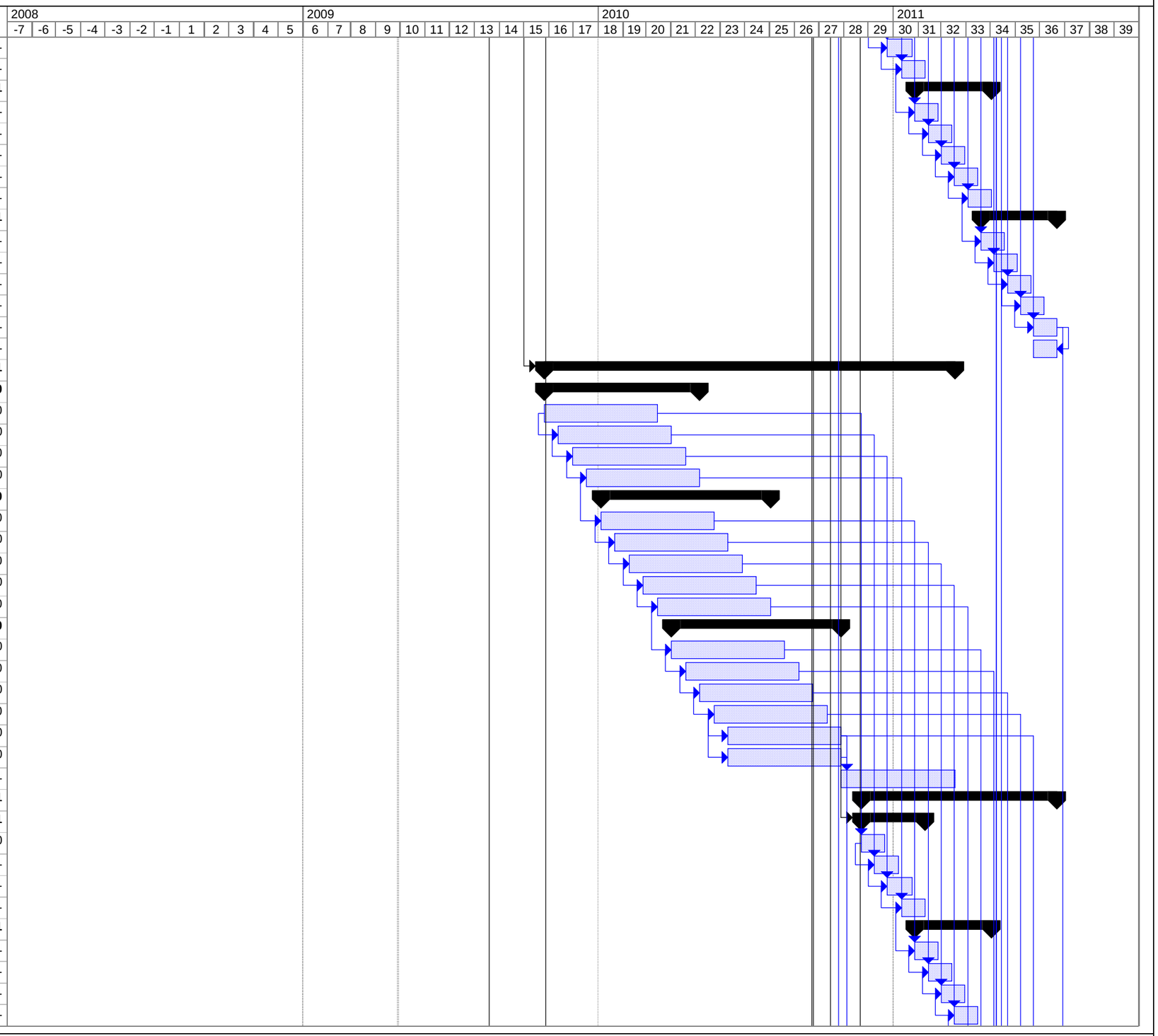


Project: Waterfront waves Condominiu
Date: 1 April 2009 (Revision 2)

Task | Progress | Milestone | Summary | Project Summary

WATERFRONT WAVES CONDOMINIUM AT BEDOK RESERVOIR ROAD
MASTER PROGRAMME (Revised on 1st April 2009)

ID	Task Name	Duration	Start	Finish
357	4th sty	25 d	Sat 12/25/10	Mon 1/24/11
358	5th sty	25 d	Wed 1/12/11	Wed 2/9/11
359	**6th sty ~ 10th sty**	**81 d**	**Fri 1/28/11**	**Mon 5/2/11**
360	6th sty	25 d	Fri 1/28/11	Fri 2/25/11
361	7th sty	25 d	Mon 2/14/11	Mon 3/14/11
362	8th sty	25 d	Wed 3/2/11	Wed 3/30/11
363	9th sty	25 d	Fri 3/18/11	Fri 4/15/11
364	10th sty	25 d	Mon 4/4/11	Mon 5/2/11
365	**11th sty ~ 15th sty**	**81 d**	**Wed 4/20/11**	**Fri 7/22/11**
366	11th sty	25 d	Wed 4/20/11	Wed 5/18/11
367	12th sty	25 d	Fri 5/6/11	Fri 6/3/11
368	13th sty	25 d	Mon 5/23/11	Mon 6/20/11
369	14th sty	25 d	Wed 6/8/11	Wed 7/6/11
370	15th sty	25 d	Fri 6/24/11	Fri 7/22/11
371	**1st storey**	25 d	Fri 6/24/11	Fri 7/22/11
372	**Tower 2 & 3 (FA 1 & FA 2)**	**435 d**	**Tue 10/27/09**	**Fri 3/18/11**
373	**2nd sty ~ 5th sty**	**165 d**	**Tue 10/27/09**	**Thu 5/6/10**
374	2nd sty	120 d	Tue 10/27/09	Mon 3/15/10
375	3rd sty	120 d	Fri 11/13/09	Thu 4/1/10
376	4th sty	120 d	Tue 12/1/09	Mon 4/19/10
377	5th sty	120 d	Fri 12/18/09	Thu 5/6/10
378	**6th sty ~ 10th sty**	**180 d**	**Tue 1/5/10**	**Mon 8/2/10**
379	6th sty	120 d	Tue 1/5/10	Mon 5/24/10
380	7th sty	120 d	Fri 1/22/10	Thu 6/10/10
381	8th sty	120 d	Tue 2/9/10	Mon 6/28/10
382	9th sty	120 d	Fri 2/26/10	Thu 7/15/10
383	10th sty	120 d	Tue 3/16/10	Mon 8/2/10
384	**11th sty ~ 15th sty**	**180 d**	**Fri 4/2/10**	**Thu 10/28/10**
385	11th sty	120 d	Fri 4/2/10	Thu 8/19/10
386	12th sty	120 d	Tue 4/20/10	Mon 9/6/10
387	13th sty	120 d	Fri 5/7/10	Thu 9/23/10
388	14th sty	120 d	Tue 5/25/10	Mon 10/11/10
389	15th sty	120 d	Fri 6/11/10	Thu 10/28/10
390	**Roof**	120 d	Fri 6/11/10	Thu 10/28/10
391	**1st storey**	120 d	Fri 10/29/10	Fri 3/18/11
392	**Tower 2 & 3 (FA 3)**	**207 d**	**Tue 11/23/10**	**Fri 7/22/11**
393	**2nd sty ~ 5th sty**	**67 d**	**Tue 11/23/10**	**Wed 2/9/11**
394	2nd sty	25 d	Tue 11/23/10	Tue 12/21/10
395	3rd sty	25 d	Thu 12/9/10	Fri 1/7/11
396	4th sty	25 d	Sat 12/25/10	Mon 1/24/11
397	5th sty	25 d	Wed 1/12/11	Wed 2/9/11
398	**6th sty ~ 10th sty**	**81 d**	**Fri 1/28/11**	**Mon 5/2/11**
399	6th sty	25 d	Fri 1/28/11	Fri 2/25/11
400	7th sty	25 d	Mon 2/14/11	Mon 3/14/11
401	8th sty	25 d	Wed 3/2/11	Wed 3/30/11
402	9th sty	25 d	Fri 3/18/11	Fri 4/15/11

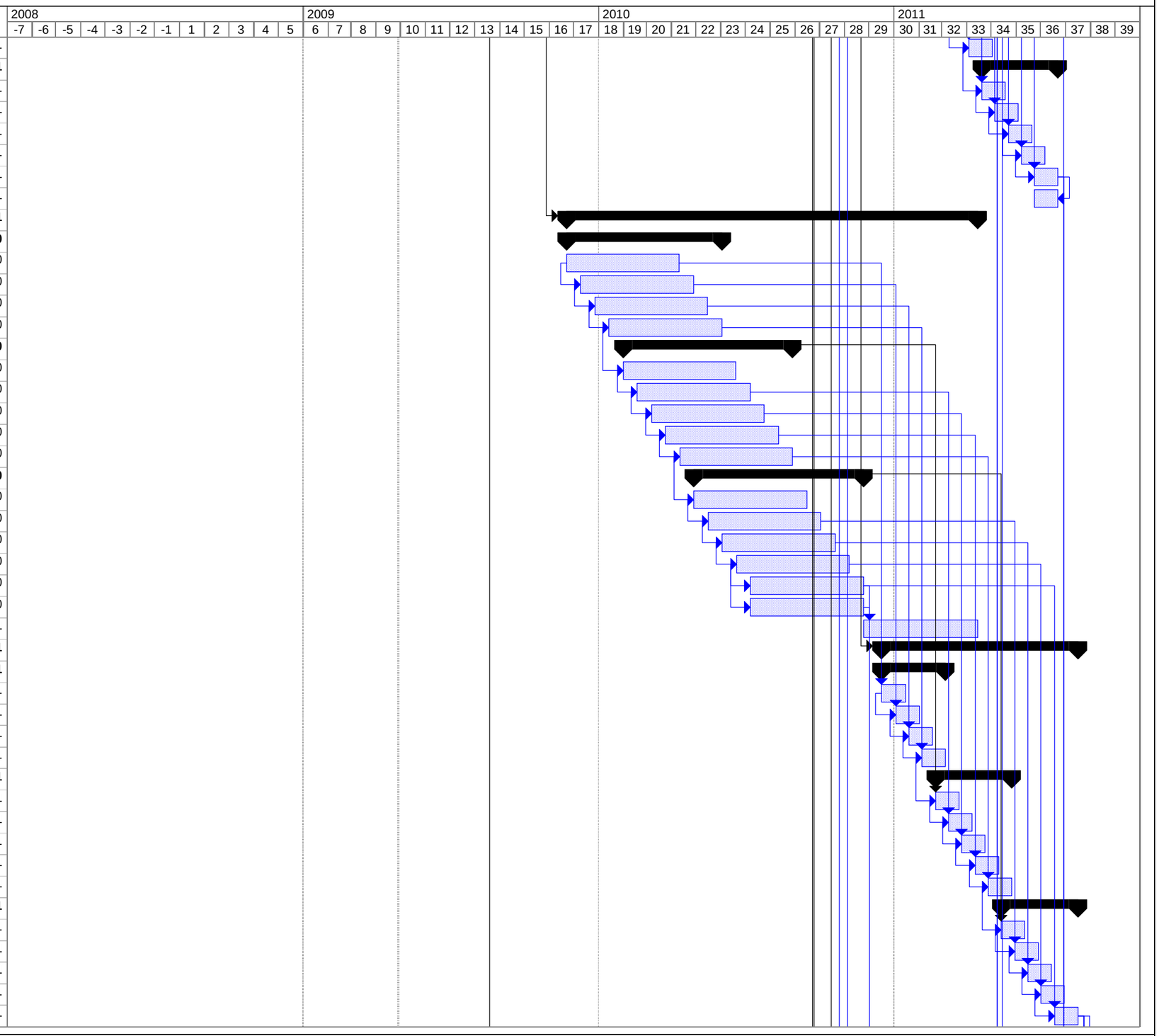


Project: Waterfront waves Condominiu
Date: 1 April 2009 (Revision 2)

Task | Progress | Milestone | Summary | Project Summary

WATERFRONT WAVES CONDOMINIUM AT BEDOK RESERVOIR ROAD
MASTER PROGRAMME (Revised on 1st April 2009)

ID	Task Name	Duration	Start	Finish
403	10th sty	25 d	Mon 4/4/11	Mon 5/2/11
404	**11th sty ~ 15th sty**	**81 d**	**Wed 4/20/11**	**Fri 7/22/11**
405	11th sty	25 d	Wed 4/20/11	Wed 5/18/11
406	12th sty	25 d	Fri 5/6/11	Fri 6/3/11
407	13th sty	25 d	Mon 5/23/11	Mon 6/20/11
408	14th sty	25 d	Wed 6/8/11	Wed 7/6/11
409	15th sty	25 d	Fri 6/24/11	Fri 7/22/11
410	**1st storey**	25 d	Fri 6/24/11	Fri 7/22/11
411	**Tower 5, 6, 7 (FA 1 & FA 2)**	**435 d**	**Mon 11/23/09**	**Thu 4/14/11**
412	**2nd sty ~ 5th sty**	**165 d**	**Mon 11/23/09**	**Wed 6/2/10**
413	2nd sty	120 d	Mon 11/23/09	Sat 4/10/10
414	3rd sty	120 d	Thu 12/10/09	Wed 4/28/10
415	4th sty	120 d	Mon 12/28/09	Sat 5/15/10
416	5th sty	120 d	Thu 1/14/10	Wed 6/2/10
417	**6th sty ~ 10th sty**	**180 d**	**Mon 2/1/10**	**Sat 8/28/10**
418	6th sty	120 d	Mon 2/1/10	Sat 6/19/10
419	7th sty	120 d	Thu 2/18/10	Wed 7/7/10
420	8th sty	120 d	Mon 3/8/10	Sat 7/24/10
421	9th sty	120 d	Thu 3/25/10	Wed 8/11/10
422	10th sty	120 d	Mon 4/12/10	Sat 8/28/10
423	**11th sty ~ 15th sty**	**180 d**	**Thu 4/29/10**	**Wed 11/24/10**
424	11th sty	120 d	Thu 4/29/10	Wed 9/15/10
425	12th sty	120 d	Mon 5/17/10	Sat 10/2/10
426	13th sty	120 d	Thu 6/3/10	Wed 10/20/10
427	14th sty	120 d	Mon 6/21/10	Sat 11/6/10
428	15th sty	120 d	Thu 7/8/10	Wed 11/24/10
429	**Roof**	120 d	Thu 7/8/10	Wed 11/24/10
430	**1st storey**	120 d	Thu 11/25/10	Thu 4/14/11
431	**Tower 5, 6, 7 (FA 3)**	**207 d**	**Fri 12/17/10**	**Tue 8/16/11**
432	**2nd sty ~ 5th sty**	**67 d**	**Fri 12/17/10**	**Sat 3/5/11**
433	2nd sty	25 d	Fri 12/17/10	Sat 1/15/11
434	3rd sty	25 d	Tue 1/4/11	Tue 2/1/11
435	4th sty	25 d	Thu 1/20/11	Thu 2/17/11
436	5th sty	25 d	Sat 2/5/11	Sat 3/5/11
437	**6th sty ~ 10th sty**	**81 d**	**Tue 2/22/11**	**Thu 5/26/11**
438	6th sty	25 d	Tue 2/22/11	Tue 3/22/11
439	7th sty	25 d	Thu 3/10/11	Thu 4/7/11
440	8th sty	25 d	Sat 3/26/11	Sat 4/23/11
441	9th sty	25 d	Tue 4/12/11	Tue 5/10/11
442	10th sty	25 d	Thu 4/28/11	Thu 5/26/11
443	**11th sty ~ 15th sty**	**81 d**	**Sat 5/14/11**	**Tue 8/16/11**
444	11th sty	25 d	Sat 5/14/11	Sat 6/11/11
445	12th sty	25 d	Tue 5/31/11	Tue 6/28/11
446	13th sty	25 d	Thu 6/16/11	Thu 7/14/11
447	14th sty	25 d	Sat 7/2/11	Sat 7/30/11
448	15th sty	25 d	Tue 7/19/11	Tue 8/16/11

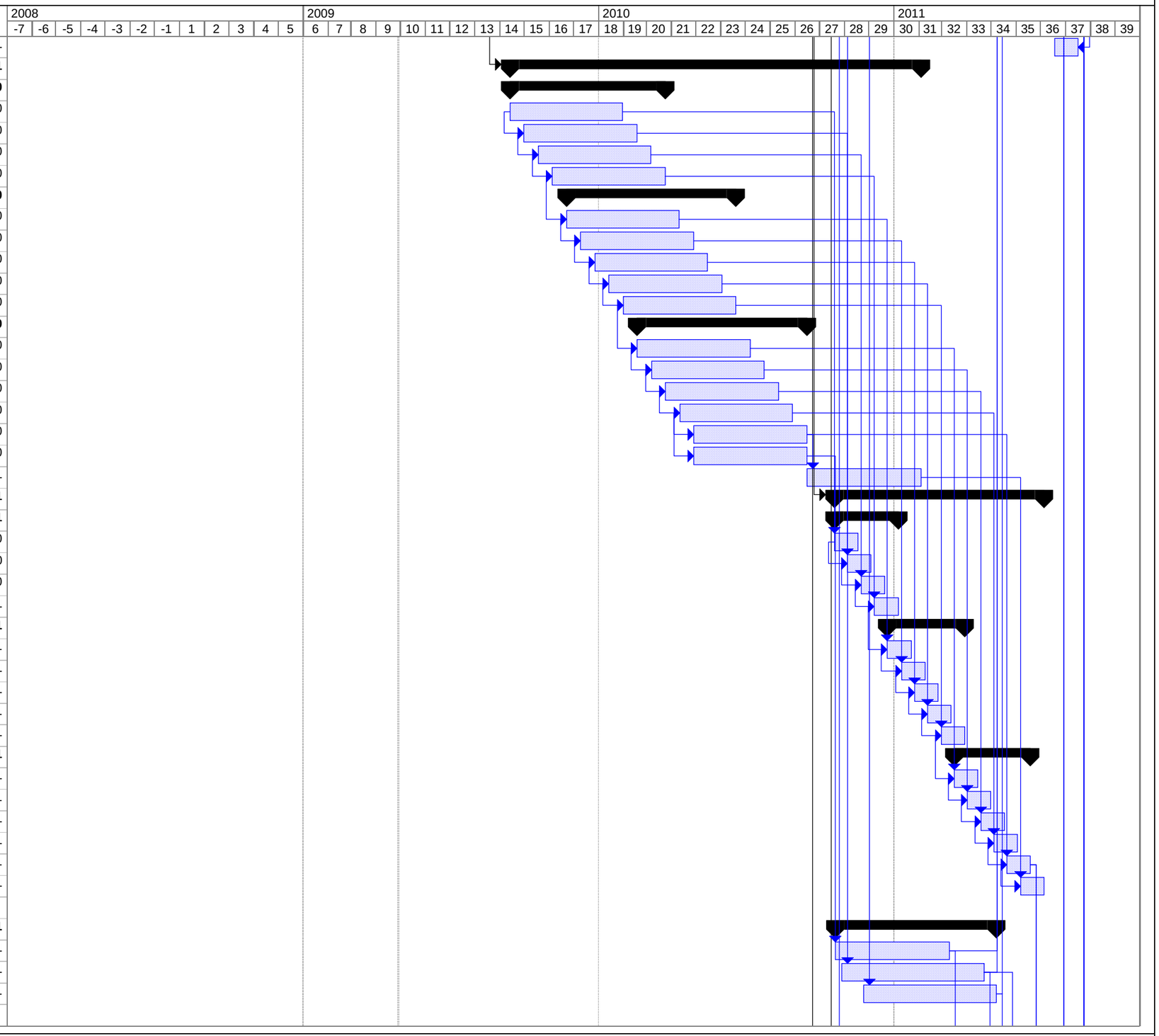


Project: Waterfront waves Condominiu
Date: 1 April 2009 (Revision 2)

Task | Progress | Milestone | Summary | Project Summary

WATERFRONT WAVES CONDOMINIUM AT BEDOK RESERVOIR ROAD
MASTER PROGRAMME (Revised on 1st April 2009)

ID	Task Name	Duration	Start	Finish
449	**1st sty**	25 d	Tue 7/19/11	Tue 8/16/11
450	**Tower 1 and 8 (FA 1 & FA 2)**	**435 d**	**Mon 9/14/09**	**Thu 2/3/11**
451	**2nd sty ~ 5th sty**	**165 d**	**Mon 9/14/09**	**Wed 3/24/10**
452	2nd sty	120 d	Mon 9/14/09	Sat 1/30/10
453	3rd sty	120 d	Thu 10/1/09	Wed 2/17/10
454	4th sty	120 d	Mon 10/19/09	Sat 3/6/10
455	5th sty	120 d	Thu 11/5/09	Wed 3/24/10
456	**6th sty ~ 10th sty**	**180 d**	**Mon 11/23/09**	**Sat 6/19/10**
457	6th sty	120 d	Mon 11/23/09	Sat 4/10/10
458	7th sty	120 d	Thu 12/10/09	Wed 4/28/10
459	8th sty	120 d	Mon 12/28/09	Sat 5/15/10
460	9th sty	120 d	Thu 1/14/10	Wed 6/2/10
461	10th sty	120 d	Mon 2/1/10	Sat 6/19/10
462	**11th sty ~ 15th sty**	**180 d**	**Thu 2/18/10**	**Wed 9/15/10**
463	11th sty	120 d	Thu 2/18/10	Wed 7/7/10
464	12th sty	120 d	Mon 3/8/10	Sat 7/24/10
465	13th sty	120 d	Thu 3/25/10	Wed 8/11/10
466	14th sty	120 d	Mon 4/12/10	Sat 8/28/10
467	15th sty	120 d	Thu 4/29/10	Wed 9/15/10
468	**Roof**	120 d	Thu 4/29/10	Wed 9/15/10
469	**1st storey**	120 d	Thu 9/16/10	Thu 2/3/11
470	**Tower 1 and 8 (FA 3)**	**221 d**	**Wed 10/20/10**	**Tue 7/5/11**
471	**2nd sty ~ 5th sty**	**67 d**	**Wed 10/20/10**	**Thu 1/6/11**
472	2nd sty	25 d	Wed 10/20/10	Wed 11/17/10
473	3rd sty	25 d	Fri 11/5/10	Fri 12/3/10
474	4th sty	25 d	Mon 11/22/10	Mon 12/20/10
475	5th sty	25 d	Wed 12/8/10	Thu 1/6/11
476	**6th sty ~ 10th sty**	**81 d**	**Fri 12/24/10**	**Tue 3/29/11**
477	6th sty	25 d	Fri 12/24/10	Sat 1/22/11
478	7th sty	25 d	Tue 1/11/11	Tue 2/8/11
479	8th sty	25 d	Thu 1/27/11	Thu 2/24/11
480	9th sty	25 d	Sat 2/12/11	Sat 3/12/11
481	10th sty	25 d	Tue 3/1/11	Tue 3/29/11
482	**11th sty ~ 15th sty**	**81 d**	**Thu 3/17/11**	**Sat 6/18/11**
483	11th sty	25 d	Thu 3/17/11	Thu 4/14/11
484	12th sty	25 d	Sat 4/2/11	Sat 4/30/11
485	13th sty	25 d	Tue 4/19/11	Tue 5/17/11
486	14th sty	25 d	Thu 5/5/11	Thu 6/2/11
487	15th sty	25 d	Sat 5/21/11	Sat 6/18/11
488	**1st storey**	25 d	Tue 6/7/11	Tue 7/5/11
489				
490	**Building external finishes**	**170 d**	**Thu 10/21/10**	**Sat 5/7/11**
491	Tower 1, 4 and 8	120 d	Thu 10/21/10	Thu 3/10/11
492	Tower 2 & 3	150 d	Fri 10/29/10	Fri 4/22/11
493	Tower 5, 6, 7	140 d	Thu 11/25/10	Sat 5/7/11
494				

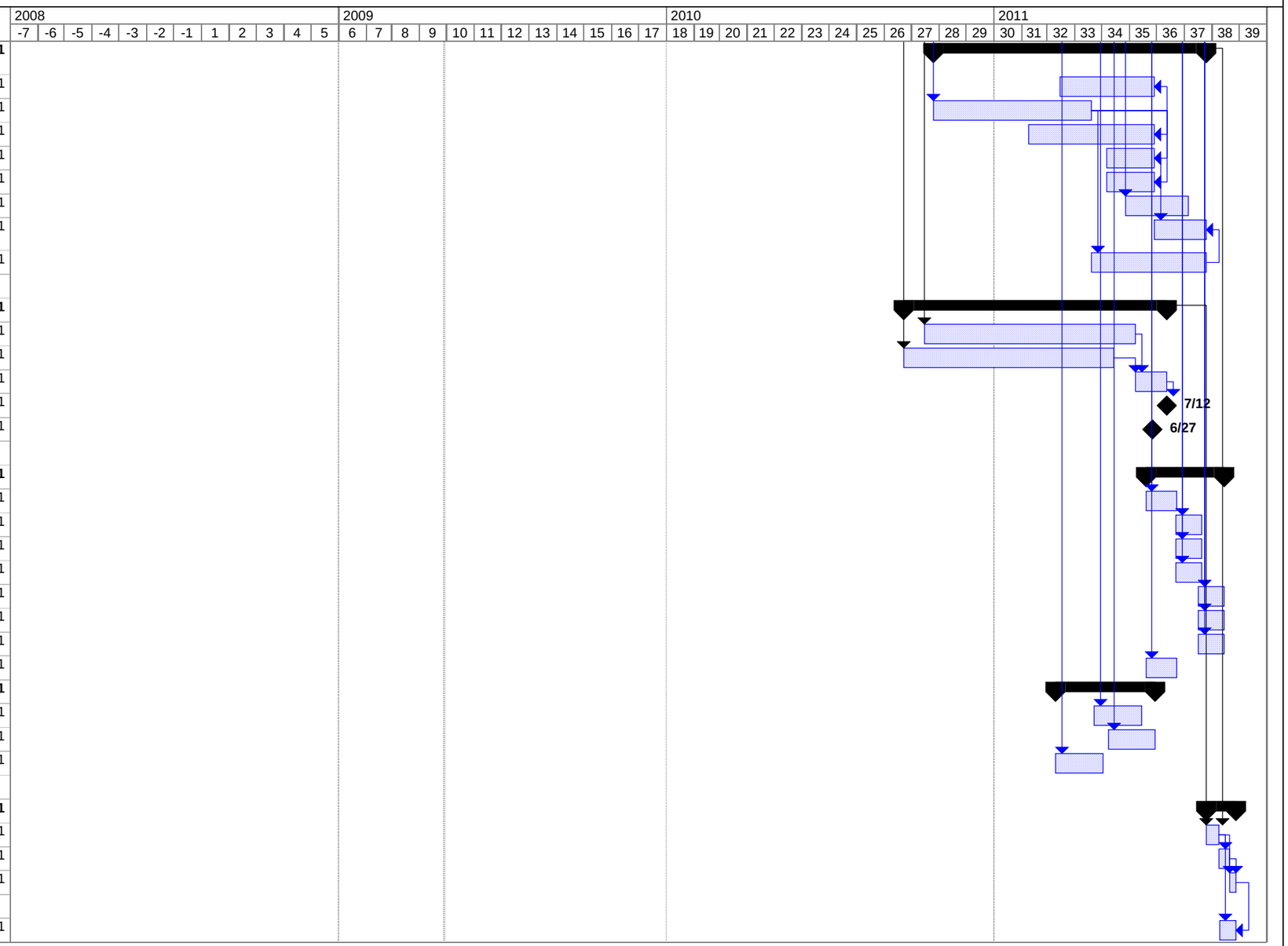


Project: Waterfront waves Condominiu
Date: 1 April 2009 (Revision 2)

Task Progress Milestone Summary Project Summary

WATERFRONT WAVES CONDOMINIUM AT BEDOK RESERVOIR ROAD
MASTER PROGRAMME (Revised on 1st April 2009)

ID	Task Name	Duration	Start	Finish
495	**External Works, Communal facilities, Hardscape & Softscape Finishes**	**260 d**	**Tue 10/26/10**	**Thu 8/25/11**
496	Boundary wall	90 d	Wed 3/16/11	Tue 6/28/11
497	Clubhouse finishes	150 d	Tue 10/26/10	Tue 4/19/11
498	Pool & Deck	120 d	Wed 2/9/11	Tue 6/28/11
499	Tennis Court	45 d	Sat 5/7/11	Tue 6/28/11
500	Playground	45 d	Sat 5/7/11	Tue 6/28/11
501	PES's	60 d	Sat 5/28/11	Fri 8/5/11
502	Jogging tracks & Fire Engine Access finishes	50 d	Wed 6/29/11	Thu 8/25/11
503	Landscape Soiling & Tree Planting Works	110 d	Wed 4/20/11	Thu 8/25/11
504				
505	**M&E Services T&C and As Built Drg submn**	**250 d**	**Thu 9/23/10**	**Tue 7/12/11**
506	Tower 5, 6, 7 & 8 - M&E Services T & C	200 d	Sat 10/16/10	Tue 6/7/11
507	ower 1, 2, 3 & 4 - M&E Services T & C	200 d	Thu 9/23/10	Sat 5/14/11
508	As Built Drawings Submission	30 d	Wed 6/8/11	Tue 7/12/11
509	**Water Supply Turn-On**	0 d	Tue 7/12/11	Tue 7/12/11
510	**MDF Room Hand-Over**	0 d	Mon 6/27/11	Mon 6/27/11
511				
512	**Units Internal QA (Total 405 Units)**	**75 d**	**Mon 6/20/11**	**Wed 9/14/11**
513	Tower 1 (58 units)	30 d	Mon 6/20/11	Sat 7/23/11
514	Tower 2 (43 units)	25 d	Sat 7/23/11	Sat 8/20/11
515	Tower 3 (43 units)	25 d	Sat 7/23/11	Sat 8/20/11
516	Tower 4 (52 units)	25 d	Sat 7/23/11	Sat 8/20/11
517	Tower 5 (56 units)	25 d	Wed 8/17/11	Wed 9/14/11
518	Tower 6 (53 units)	25 d	Wed 8/17/11	Wed 9/14/11
519	Tower 7 (41 units)	25 d	Wed 8/17/11	Wed 9/14/11
520	Tower 8 (59 units)	30 d	Mon 6/20/11	Sat 7/23/11
521	**Units External QA (Total 8 Tower Blocks)**	**95 d**	**Fri 3/11/11**	**Wed 6/29/11**
522	Tower 2 & 3	45 d	Sat 4/23/11	Tue 6/14/11
523	Tower 5, 6, 7	45 d	Mon 5/9/11	Wed 6/29/11
524	Tower 1, 4 and 8	45 d	Fri 3/11/11	Mon 5/2/11
525				
526	**TOP inspection**	**28 d**	**Fri 8/26/11**	**Tue 9/27/11**
527	RI's Inspection	12 d	Fri 8/26/11	Thu 9/8/11
528	BCA's Inspection	10 d	Fri 9/9/11	Tue 9/20/11
529	Obtained TOP Cert	6 d	Wed 9/21/11	Tue 9/27/11
530				
531	**Preparation for Hand-over**	15 d	Sat 9/10/11	Tue 9/27/11



Project: Waterfront waves Condominiu
Date: 1 April 2009 (Revision 2)

Task | Progress | Milestone | Summary | Project Summary

SECTION 4

PROGRAMME

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

Service	Authority	Original Submission			Comments/Resubmission			Approval/		
		Scheduled	Actual	Comment	Resubmit	Comment	Resubmit	Comment	Resubmit	Clearance
Application for Electricity Supply	SP Services Ltd	25/9/07	25/9/07	-	-	-	-	-	-	2/7/07
Power Supply Substation	SP PowerGrid Ltd	15 /3/08	12/3/08	27/3/08	4/6/08	15/8/08	24/6/09 (Re-endorsement)			2/9/08 6/7/09 (Re-endorsement)
Metering Layout	SP Services Ltd	1/12/10	10/11/10							9/12/10
Telephone Installation	TFCC	10/9/08	3/12/08	-	-	-	-	-	-	14/1/09
Sanitary Installation	PUB Water Reclamation (Network) Dept	26/9/08	24/2/09	-	-	-	-	-	-	27/2/09
Domestic Water Supply	PUB (Water Supply) Network Dept	15/8/08	30/9/08	21/10/08	15/1/09	2/2/09	6/2/09	-	-	19/2/09
Gas Supply Installation	City Gas Pte Ltd	5/9/08	9/12/08	18/12/08	20/1/09	-	-	-	-	17/2/09
Air Conditioning & Ventilation Inst.	FSSD	17/10/08	17/4/09	-	-	-	-	-	-	27/4/09
Fire Fighting & Alarm Installation	FSSD	7/11/08	19/3/9	-	-	-	-	-	-	1/4/09
Broadband Co-axial Cable System (BCS)	Starhub Cable Vision	10/9/08	3/12/08	-	-	-	-	-	-	14/1/09
Fuel Storage	FSSD									
	NEA (Pollution Control)									

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	✓
- CF	✓	- PQP/QSP	✓

Project Files to be initiated by PM as and when required

File Ref:		File Ref:		File Ref:	

(✓*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	Trece Koh/Server (Soft Copy)
Incoming Architectural Sketches/Details	Trece Koh/Server (Soft Copy)
Incoming Structural Drawings	Trece Koh/Server (Soft Copy)
M&E Drawings	
- Electrical Installation	Trece Koh
- Lift & Escalator Installation	Trece Koh
- Air Conditioning & Ventilation Installation	Tay Heng Chuan
- Fire Fighting & Alarm Installation	Tay Heng Chuan
- Plumbing & Sanitary Installation	Tay Heng Chuan
- Swimming Pool & Filtration Installation	Tay Heng Chuan
Other Drawings	
- Interior Design	NA
- Landscape/Waterscape	Trece Koh (Soft Copy)

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

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 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
AE : Assistant Engineer
SS : ACEPL Site Staff

SECTION 8

DESIGN INPUT & METHODOLOGY

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

ITEM	KEPT BY
Owner's Design Brief based on S&P	Trece Koh

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~~
~~Wet 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/~~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

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 – NOT USED

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	Energy Efficiency Index, Electrical Sub-metering, Energy Efficient Features, Water Usage, CO monitoring, Luminance Level, Innovation

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 – Not Used

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	

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 – Not Used

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	C, A
M&E Cost Estimate Report	I
Pre-Qualification of Tenderers	-
Tender Documents	C, A
Tender Report	C, 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.

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