Alpha
Consulting Engineers Pte Ltd

PROJECT QUALITY PLAN

TERRENE AT BUKIT TIMAH

For

PREMIER LAND DEVELOPMENT PTE LTD

Copy No.	1

Prepared By: Yip Yoke Fun

Authorised By: Loh Fook Yuen

Date: 5 January 2011

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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	6055-PQP	5 January 2011

1.2 Revision Record

Revision	Date of Issue	Section Reference	Page(s)	Remarks
0	25 June 2009	1 to 11	28	+ 1 pg (Sect 9.1 – Sustainable Design Features / Criteria)
1	3 May 2010	1 to 11	28	+ 1 pg (Sect 9.1 – Sustainable Design Features / Criteria)
2	5 January 2011	1 to 11	28	+ 15 pg (Sect 4.1 + Sect 9.1 Overall Programmes) & (Sustainable Design Features / Criteria)

SECTION 2

PROJECT INFORMATION

2.1 Project Description

Type of Development	Residential

Statistics of Development	
Site Area, m²	11,090.40
Nett Floor Area, m²	-
Gross Floor Area, m²	18,615.828
Covered Carpark, m²	8,500
No. of Covered Carpark Lots	172
No. of Apartments/Houses	172
No. of Beds (for Hospitals)	NA
No. of Guestroom (for Hotels)	NA
No. of Blocks / No. of Storeys	3 Blks of 5-Storey
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	3.1305	2.66	1.04	0.78	3.46	0.198	

Total Project Construction Cost (S$ x1M)			
	Site Clearance	Piling Works	Main Contract
Estimate	-		
Awarded	-	2.4	51.5

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

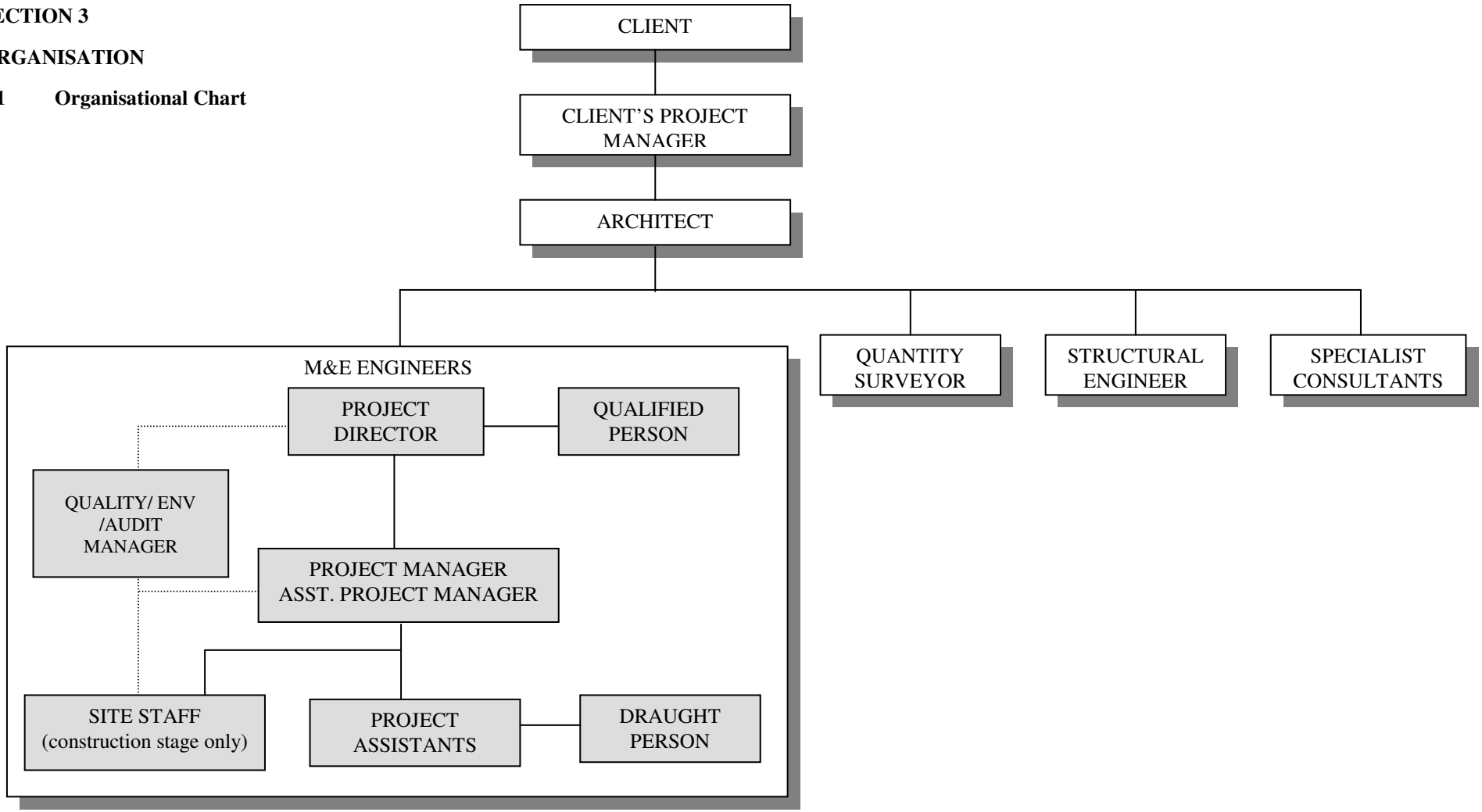
EJECTOR & DIVERTER	✓	SUMP PUMP	✓	FUEL OIL TANK		LIFT & ESCALATOR	✓	PRESSURE VESSEL	✓	HOISTS		FOAM	

(✓*where applicable*)

SECTION 3

ORGANISATION

3.1 Organisational Chart



SECTION 3

ORGANISATION

3.2 ACEPL's Project Team Member

TITLE		NAME
Project Director		Loh Fook Yuen (LFY)
Qualified Person	Mechanical	Choong Choon Guan (CCG)
	Electrical	Loh Fook Yuen (LFY)
Project Manager		Yip Yoke Fun (YYF)
Assistant Project Manager		Chua Wooi Ting (CWT)
Project Assistant (Mech)		-
Project Assistant (Elect)		-
Draughtsperson		Common Pool
Resident Engineer (M&E)		-
Assistant Resident Engineer (M&E)		-
Clerk-of-Work (M&E)		Chan Khay Cheonog (CKC)

3.3 Client/Client's Representatives

Client: Unison Construction Pte Ltd

Address: 180 Paya Lebar Road #09-06
Yi Guang Building
Singapore 409032

Tel: 6846 3583

Fax: 68423787

Client's Representatives:

Name of Company	Contact Person	Contact
Premier Land Development Pte Ltd	Name: Mr Lucas Shannon Position: Development Director	Tel: 6494 3569 Fax: 6532 5115 Handphone: - Email: lucas.shannon@lasalle.com
UOL Project Management Pte Ltd	Name: Mr Kwan Weng Foon Position: Senior General Manager (Development)	Tel: 6350 5183 Fax: 6252 9822 Handphone: - Email: kwan.wengfoon@uol.com.sg
UOL Project Management Pte Ltd	Name: Ms Swee Jenny Position: Senior Project Manager	Tel: 6358 1724 Fax: 6252 9822 Handphone: 9488 6136 Email: swee.jenny@uol.com.sg
Unison Contraction Pte Ltd	Name: Mr Tan Thiam Huat Position: Project Director	Tel: 6846 3584 Fax: 6842 3787 Handphone: 97329718 Email: thtan@unison.com.sg
	Name: Position:	Tel: Fax: Handphone: Email:

3.4 **Other Consultants** (Local)

Function / Name of Company	Contact Person	Contact
Architect Consortium 168 Architects Pte Ltd	Name: Ms Phyllis Chua Position: Architect	Tel: 6334 4887 Fax: 6334 2627 Handphone: - Email: toh-tuck@con168.com.sg
Quantity Surveyor KPK Quantity Surveyors (S'pore) Pte Ltd	Name: Mr Chong Yoong Wei Position: Executive Quantity Surveyor	Tel: 6508 3419 Fax: 6536 2633 Handphone: - Email: TohTuckDrive1755KPK@kpkqs.com.sg
Structural Engineer KTP Consultants Pte Ltd	Name: Mr Chen Yue Feng Position: Director	Tel: 6273 5622 Fax: 6273 8454 Handphone: 9756 4906 Email: yfchen@ktp.com.sg
Interior Designer	Name: Position:	Tel: Fax: Handphone: Email:
Lighting Consultant	Name: Position:	Tel: Fax: Handphone: Email:
Acoustic Consultant	Name: Position:	Tel: Fax: Handphone: Email:
Landscape Consultant Peridian Asia Pte Ltd	Name: Mr Tsuyoshi Narita Position: Senior Associate	Tel: 6227 7998 Fax: 6227 0509 Handphone: - Email: tsuyoshi@peridianasia.com
_____	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 Company	Contract *	Contact Person	Contact
Main Contractor Unison Construction Pte Ltd	DSC	Name: Mr Tan Thiam Huat Position: Director	Tel: 6846 3584 Fax: 6842 3787 Handphone: 97329718 Email: thtan@unison.com.sg
Air Conditioning & Ventilation Installation Sub-Contractor Tactics System Engineering Pte Ltd	DSC	Name: Mr Bernard Ling Position: Senior Engineer	Tel: 6786 4144 Fax: 6786 4158 Handphone: 97705740 Email: tse@tactics.com.sg
Plumbing & Sanitary Installation Sub-Contractor Zheng Keng Engineering & Construction Pte Ltd	DSC	Name: Mr Tay T.S Position: Project Manage	Tel: 6756 8610 Fax: 6753 4718 Handphone: 90022851 Email: contract@zhengkeng.com.sg
Electrical Installation Sub-Contractor Grace Electrical Engineering Pte Ltd	DSC	Name: Mr Teo Boon Len Position: Project Director	Tel: 6741 3423 Fax: 6741 7506 Handphone: - Email: geepl@singnet.com.sg
Lift Installation Sub-Contractor Hitachi Asia Ltd	DSC	Name: Mr Edmund Huang Position: Assistant Engineer Executive	Tel: 6416 1711 Fax: 6561 0766 Handphone: 97823636 Email: jiyi@hees.hitachi.com.sg
Fire Fighting & Alarm Installation Sub-Contractor Sprinkler Engineering Pte Ltd	DSC	Name: Mr Ben Lim Position: Senior Project Manager	Tel: 6453 1488 Fax: 6453 7656 Handphone: Email:sprinkler@singnet.com.sg
Swimming Pool Filtration Plant Installation Sub-Contractor Venus Enterprise Pte Ltd	DSC	Name: Mr Daniel Kaw Position: Project Manager	Tel: 6272 9185 Fax: 6272 1091 Handphone: 97772274 Email: Daniel@venus.com.sg
Carpark System Installation Sub-Contractor	DSC	Name: Position:	Tel: Fax: Handphone: Email:
_____		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 Chin Yoke Fah	6823 8556
(b) Diversion		
SP Services:		
(a) Customer Supply		
(b) Installation		
(c) Meter Section		
(d) Road Lighting		
TFCC:		
(a) SCV	Mr Patrick Fwok	9850 0110
(b) SingTel	Mr Chin Ting Kee/Mr Lim Keng Tiong	6345 5903
(c) IDA		
BCA:		
(a) Building Plan		
FSSD:		
(a) Building Plan	Mrs Ling Yap Kim Har	6325 8649
(b) M&E Plan	Mr Ridzuwan Supari	6848 1418
PUB (Water Supply) Network Dept:		
(a) Water Conservation		
(b) Plumbing Plan	Mr William Ang/Mr Ng Guan Chai	6885 2401
(c) Diversion		
PUB Water Reclamation (Network) Dept:		
(a) Building Plan/CBPU	Mr Philip Tan	6731 9321
(b) M&E Plan		
(c) Diversion		
City Gas Pte Ltd:		
(a) Planning/Submission	Mr Liew Khee Boon	6578 7603
(b) Installation/Inspection		
PowerGas Pte Ltd		
(a) Diversion		
NEA (Pollution Control)		
(a) Planning/Submission		
(b) Inspection		

SECTION 4

PROGRAMME

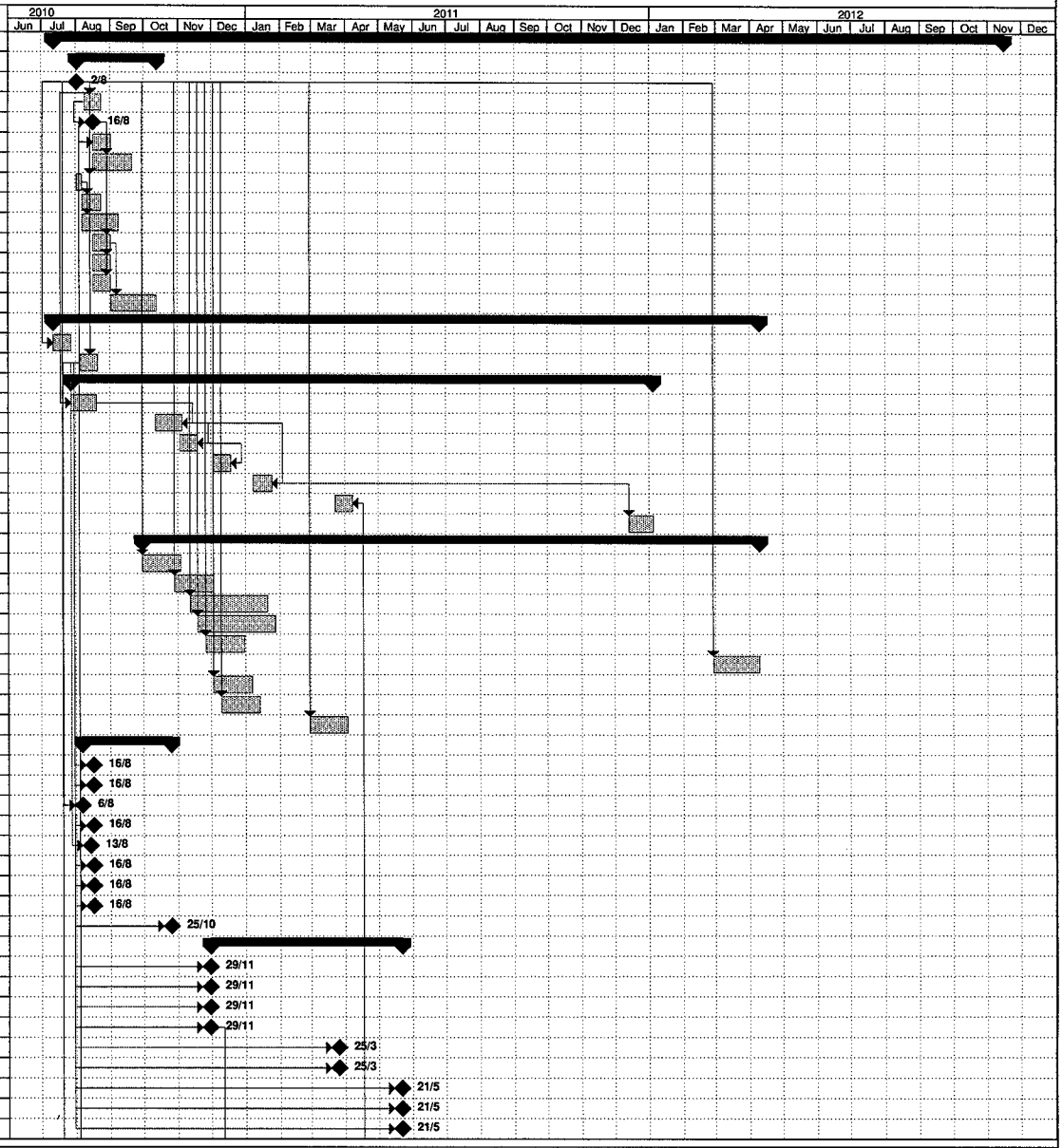
4.1 Overall Programme (Refer to attached master program)

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																									

TERRENE AT BUKIT TIMAH
CONSTRUCTION PROGRAMME

UNISON CONSTRUCTION PTE LTD
CONTRACT PERIOD: 16/08/2010 - 15/02/2013

ID	Task Name	Duration	Start	Finish
1	**MASTER PROGRAMME (27 MONTHS)**	**698 days**	**Mon 12/7/10**	**Thu 15/11/12**
2	**PRELIMINARIES**	**62 days**	**Mon 2/8/10**	**Tue 12/10/10**
3	Take-over Site	0 days	Mon 2/8/10	Mon 2/8/10
4	Mobilisation	13 days	Mon 9/8/10	Mon 23/8/10
5	Site Commencement	0 days	Mon 16/8/10	Mon 16/8/10
6	Finalise Master Programme	14 days	Tue 17/8/10	Wed 1/9/10
7	Site Facilities	30 days	Tue 17/8/10	Mon 20/9/10
8	Design & Submission Earth Control Measure	5 days	Mon 2/8/10	Fri 6/8/10
9	Obtain approval from PUB (Drainage)	14 days	Sat 7/8/10	Mon 23/8/10
10	Installation Earth Control Measure & Vehicle Washing Bay	28 days	Sat 7/8/10	Wed 8/9/10
11	Precomputation Survey	14 days	Tue 17/8/10	Wed 1/9/10
12	Pre-Conditons Survey	14 days	Tue 17/8/10	Wed 1/9/10
13	Detection of Underground Services	14 days	Tue 17/8/10	Wed 1/9/10
14	Setting Out and Excavate Oversite	35 days	Thu 2/9/10	Tue 12/10/10
15	**AUTHORITY SUBMISSION AND APPROVAL**	**539 days**	**Mon 12/7/10**	**Mon 9/4/12**
16	Factory Registration	14 days	Mon 12/7/10	Tue 27/7/10
17	Permit to Commence Structural Works	14 days	Thu 5/8/10	Fri 20/8/10
18	**STRUCTURAL SUBMISSION & APPROVAL**	**457 days**	**Wed 28/7/10**	**Wed 4/1/12**
19	Sub-structure	21 days	Wed 28/7/10	Thu 19/8/10
20	ESS RC Piling	21 days	Tue 12/10/10	Thu 4/11/10
21	1st Storey E-Deck	14 days	Wed 3/11/10	Thu 18/11/10
22	Superstructure	14 days	Fri 3/12/10	Sat 18/12/10
23	Attic Roof Structural Steel	14 days	Sat 8/1/11	Mon 24/1/11
24	Glass Railing	14 days	Wed 23/3/11	Thu 7/4/11
25	Drop-Off/ Pavilion Roof Structural Steel	21 days	Wed 14/12/11	Wed 4/1/12
26	**M&E SUBMISSION & APPROVAL**	**469 days**	**Thu 30/9/10**	**Mon 9/4/12**
27	Power Grid Substation	30 days	Thu 30/9/10	Wed 3/11/10
28	IDA (TFCC/ SCV)	30 days	Fri 29/10/10	Thu 2/12/10
29	City Gas	60 days	Fri 12/11/10	Thu 20/1/11
30	PUB Water	60 days	Fri 19/11/10	Thu 27/1/11
31	CBPU (Sanitation)	30 days	Fri 26/11/10	Thu 30/12/10
32	CBPU (Ejector)	30 days	Tue 28/2/12	Mon 9/4/12
33	FSSD (ACMV)	30 days	Fri 3/12/10	Thu 6/1/11
34	FSSD (Fire Protection)	30 days	Fri 10/12/10	Thu 13/1/11
35	FSSD (Ductless MV)	30 days	Mon 28/2/11	Sat 2/4/11
36	**CONFIRMATION OF DOMESTIC CONTRACTS**	**68 days**	**Fri 6/8/10**	**Mon 25/10/10**
37	Aircon & Mech Ventilation System	0 days	Mon 16/8/10	Mon 16/8/10
38	Electrical Installation	0 days	Mon 16/8/10	Mon 16/8/10
39	Plumbing & Drainage System	0 days	Fri 6/8/10	Fri 6/8/10
40	Fire Protection Installation	0 days	Mon 16/8/10	Mon 16/8/10
41	Lift Installation	0 days	Fri 13/8/10	Fri 13/8/10
42	Swimming Pool & Filtration System	0 days	Mon 16/8/10	Mon 16/8/10
43	Water Feature Pumping System	0 days	Mon 16/8/10	Mon 16/8/10
44	Security System	0 days	Mon 16/8/10	Mon 16/8/10
45	Aluminium & Glazing works	0 days	Mon 25/10/10	Mon 25/10/10
46	**CONFIRMATION OF NOMINATED CONTRACTS**	**150 days**	**Mon 29/11/10**	**Sat 21/5/11**
47	Kitchen Cabinets	0 days	Mon 29/11/10	Mon 29/11/10
48	Wardrobes	0 days	Mon 29/11/10	Mon 29/11/10
49	Kitchen Appliances	0 days	Mon 29/11/10	Mon 29/11/10
50	Sanitary Wares, Fittings & Accessories	0 days	Mon 29/11/10	Mon 29/11/10
51	Ironmongery	0 days	Fri 25/3/11	Fri 25/3/11
52	Softscaping	0 days	Fri 25/3/11	Fri 25/3/11
53	Signages	0 days	Sat 21/5/11	Sat 21/5/11
54	Sculpture Rock	0 days	Sat 21/5/11	Sat 21/5/11
55	Landscape Furniture	0 days	Sat 21/5/11	Sat 21/5/11



Prepared by: Tan Thiam Huat
Date: 14/10/2010

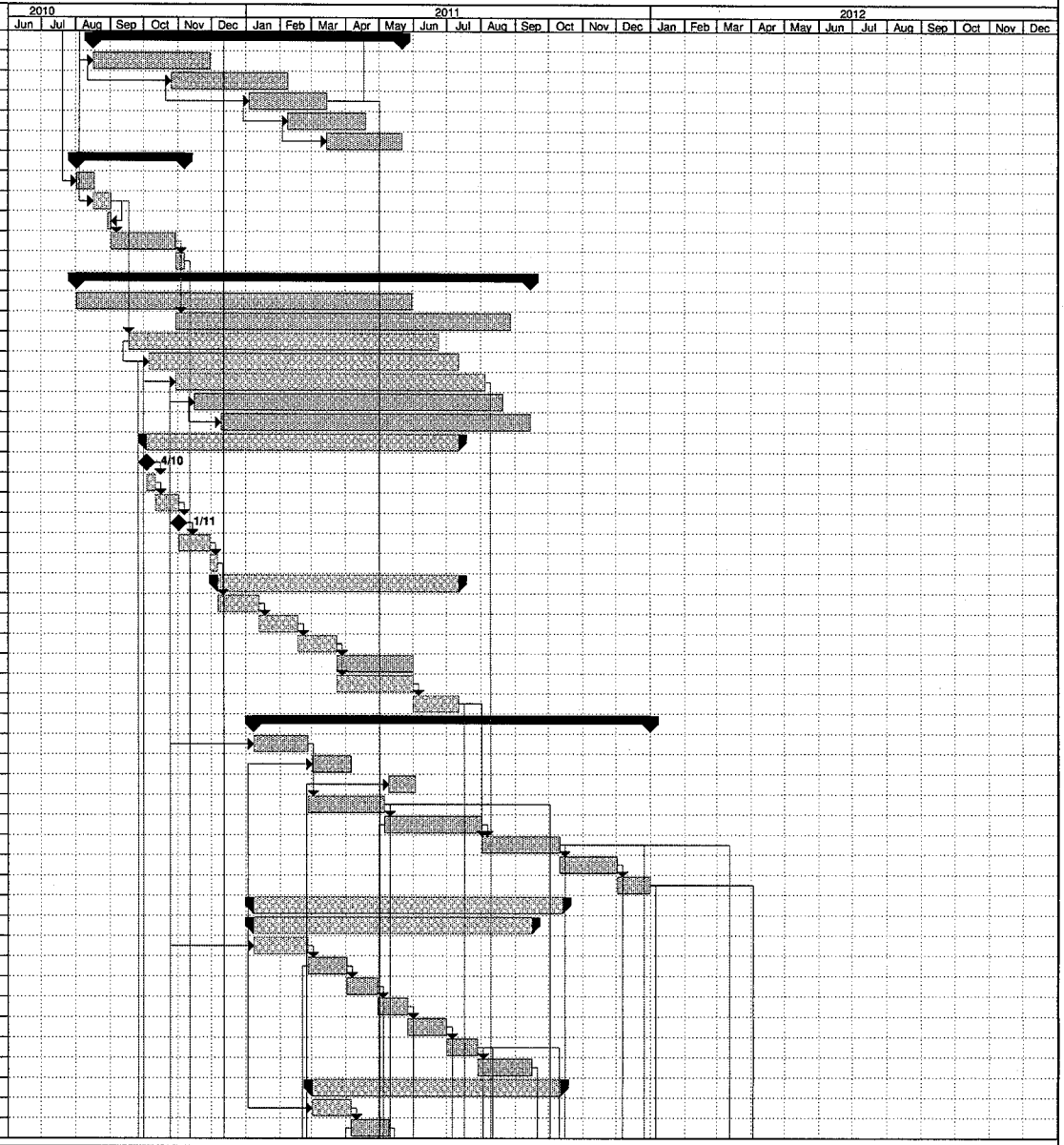
Task | Milestone | Project Summary | External Milestone | Critical Task
Progress | Summary | External Tasks | Deadline

REVISION 2

TERRENE AT BUKIT TIMAH
CONSTRUCTION PROGRAMME

UNISON CONSTRUCTION PTE LTD
CONTRACT PERIOD: 16/08/2010 - 15/02/2013

ID	Task Name	Duration	Start	Finish
56	**SHOP DRAWINGS SUBMISSION & APPROVAL**	**240 days**	**Tue 17/8/10**	**Sat 21/5/11**
57	Co-ordination Dwgs Submission & Approval- Basement	90 days	Tue 17/8/10	Mon 29/11/10
58	Co-ordination Dwgs Submission & Approval- E-Deck	90 days	Tue 26/10/10	Mon 7/2/11
59	Co-ordination Dwgs Submission & Approval- Sty 1-4	60 days	Tue 4/1/11	Mon 14/3/11
60	Coordination Dwgs Submission & Approval- Sty 5-Attic	60 days	Tue 8/2/11	Mon 18/4/11
61	Coordination Dwgs Submission & approval- Roof	60 days	Tue 15/3/11	Sat 21/5/11
62	**EARTH RETAINING OR STABILISING STRUCTURES (ERSS)**	**84 days**	**Mon 2/8/10**	**Sat 6/11/10**
63	PE Design for Temporary Earth Retaining System	14 days	Mon 2/8/10	Tue 17/8/10
64	Design Submission of CBP/ Soldier Pile to BCA Approval	14 days	Tue 17/8/10	Wed 1/9/10
65	Mobilization of Plant & Equipment	3 days	Mon 30/8/10	Wed 1/9/10
66	Installation of CBP/ Soldier Pile	50 days	Thu 2/9/10	Fri 29/10/10
67	Demobilization of Plant & Equipment	7 days	Sat 30/10/10	Sat 6/11/10
68	**SUB-STRUCTURAL WORKS - BASEMENT**	**352 days**	**Mon 2/8/10**	**Wed 14/9/11**
69	Excavation	260 days	Mon 2/8/10	Mon 30/5/11
70	Instrumentation Monitoring	260 days	Sat 30/10/10	Sat 27/8/11
71	Pile Cut-Off / E.C.C.	240 days	Sat 18/9/10	Thu 23/6/11
72	Drainage Lines	240 days	Wed 6/10/10	Mon 11/7/11
73	R.C. Basement Slab	240 days	Sat 30/10/10	Thu 4/8/11
74	R.C. Retaining Wall / Column / Lift Core Walls / Stair	240 days	Tue 16/11/10	Sat 20/8/11
75	Backfilling	240 days	Fri 10/12/10	Wed 14/9/11
76	**SHOWFLAT AREA**	**242 days**	**Mon 4/10/10**	**Mon 11/7/11**
77	Handover of Showflat	0 days	Mon 4/10/10	Mon 4/10/10
78	Clearance of Showflat	7 days	Mon 4/10/10	Mon 11/10/10
79	Demolition of Showflat	18 days	Tue 12/10/10	Mon 1/11/10
80	Handover to Piling Contractor	0 days	Mon 1/11/10	Mon 1/11/10
81	Mobilisation & Bored Piling Works by Piling Contractor	24 days	Tue 2/11/10	Mon 29/11/10
82	Handover of Showflat to Building Contractor	6 days	Tue 30/11/10	Mon 6/12/10
83	**SUB-STRUCTURE WORK**	**187 days**	**Tue 7/12/10**	**Mon 11/7/11**
84	Excavation	32 days	Tue 7/12/10	Wed 12/1/11
85	Pile cut-off / E.C.C.	30 days	Thu 13/1/11	Wed 16/2/11
86	Drainage Lines	30 days	Thu 17/2/11	Wed 23/3/11
87	R.C. Basement Slab	60 days	Thu 24/3/11	Tue 31/5/11
88	Retaining Wall / Column	60 days	Thu 24/3/11	Tue 31/5/11
89	Backfilling	35 days	Wed 1/6/11	Mon 11/7/11
90	**E-DECK**	**312 days**	**Sat 8/1/11**	**Sat 31/12/11**
91	Block 111/ 113/ 115/ 117	42 days	Sat 8/1/11	Fri 25/2/11
92	Block 119/ 121/ 123	30 days	Wed 2/3/11	Tue 5/4/11
93	Block 125	21 days	Tue 10/5/11	Thu 2/6/11
94	Fire Engine Access Along Jalan Jurong Kechil	60 days	Sat 26/2/11	Thu 5/5/11
95	E Deck Between Block 111-117 & Block 119-123	75 days	Fri 6/5/11	Mon 1/8/11
96	E Deck Along Toh Tuck Road/ Drive	60 days	Tue 2/8/11	Mon 10/10/11
97	E Deck Between Block 119-123 & Block 125	45 days	Tue 11/10/11	Thu 1/12/11
98	E Deck Between Block 125 & ESS	30 days	Fri 2/12/11	Sat 31/12/11
99	**SUPER STRUCTURE WORKS**	**240 days**	**Sat 8/1/11**	**Thu 13/10/11**
100	**BLOCK 111/ 113/ 115/ 117**	**216 days**	**Sat 8/1/11**	**Thu 15/9/11**
101	1st Storey Slab	42 days	Sat 8/1/11	Fri 25/2/11
102	2nd Storey Slab	30 days	Sat 26/2/11	Fri 1/4/11
103	3rd Storey Slab	24 days	Sat 2/4/11	Fri 29/4/11
104	4th Storey Slab	24 days	Sat 30/4/11	Thu 26/5/11
105	5th Storey Slab	30 days	Fri 27/5/11	Thu 30/6/11
106	Roof Attic/ Terrace	24 days	Fri 1/7/11	Thu 28/7/11
107	Metal Roofing	42 days	Fri 29/7/11	Thu 15/9/11
108	**BLOCK 119/ 121/ 123**	**193 days**	**Wed 2/3/11**	**Tue 11/10/11**
109	1st Storey Slab	30 days	Wed 2/3/11	Tue 5/4/11
110	2nd Storey Slab	30 days	Wed 6/4/11	Mon 9/5/11



Prepared by: Tan Thiam Huat
Date: 14/10/2010

Task | Milestone | Project Summary | External Milestone | Critical Task
Progress | Summary | External Tasks | Deadline

REVISION 2

TERRENE AT BUKIT TIMAH
CONSTRUCTION PROGRAMME

UNISON CONSTRUCTION PTE LTD
CONTRACT PERIOD: 16/08/2010 - 15/02/2013

ID	Task Name	Duration	Start	Finish
111	3rd Storey Slab	21 days	Tue 10/5/11	Thu 2/6/11
112	4th Storey Slab	21 days	Fri 3/6/11	Mon 27/6/11
113	5th Storey Slab	28 days	Tue 28/6/11	Fri 29/7/11
114	Roof Attic/ Terrace	21 days	Sat 30/7/11	Tue 23/8/11
115	Metal Roofing	42 days	Wed 24/8/11	Tue 11/10/11
116	**BLOCK 125**	**135 days**	**Tue 10/5/11**	**Thu 13/10/11**
117	1st Storey Slab	21 days	Tue 10/5/11	Thu 2/6/11
118	2nd Storey Slab	21 days	Fri 3/6/11	Mon 27/6/11
119	3rd Storey Slab	14 days	Tue 28/6/11	Wed 13/7/11
120	4th Storey Slab	14 days	Thu 14/7/11	Fri 29/7/11
121	5th Storey Slab	21 days	Sat 30/7/11	Tue 23/8/11
122	Roof Attic/ Terrace	16 days	Wed 24/8/11	Sat 10/9/11
123	Metal Roofing	28 days	Mon 12/9/11	Thu 13/10/11
124	**MATERIAL & SAMPLE SUBMISSION/ INSPECTION AND APPROVAL**	**391 days**	**Fri 6/8/10**	**Thu 3/11/11**
125	Confirmation of NSC & DSC	99 days	Fri 6/8/10	Mon 29/11/10
126	Confirmation & Approval of Arch/ M&E Materials' Sample	140 days	Fri 15/10/10	Sat 26/3/11
127	Marble Flooring Dry Lay	160 days	Mon 2/5/11	Thu 3/11/11
128	**MOCK-UP UNITS AT 2ND STOREY (3 TYPES)**	**174 days**	**Sat 30/4/11**	**Thu 17/11/11**
129	Trade Demonstrations	120 days	Sat 30/4/11	Thu 15/9/11
130	Type B & C	120 days	Fri 27/5/11	Thu 13/10/11
131	Type D	100 days	Wed 6/7/11	Sat 29/10/11
132	Lift Lobby/ Lift Car	90 days	Fri 29/7/11	Thu 10/11/11
133	Review & Approval Mock Up Units B, C & D	30 days	Fri 14/10/11	Thu 17/11/11
134	**ARCHITECTURAL WORKS (APT UNITS INTERNALLY)**	**311 days**	**Sat 30/4/11**	**Fri 11/5/12**
135	**BLOCK 111/ 113/ 115/ 117**	**311 days**	**Sat 30/4/11**	**Fri 11/5/12**
136	**1ST STOREY**	**209 days**	**Sat 30/4/11**	**Sat 24/12/11**
137	Ceiling Skimming	15 days	Sat 30/4/11	Mon 16/5/11
138	Brick Laying	28 days	Wed 4/5/11	Sat 4/6/11
139	Insatallation of Door & Window Frames	24 days	Thu 12/5/11	Wed 8/6/11
140	Wall Plastering	28 days	Mon 16/5/11	Thu 16/6/11
141	Waterproofing	20 days	Tue 24/5/11	Wed 15/6/11
142	Floor & Wall Screeds	20 days	Mon 30/5/11	Tue 21/6/11
143	Tiling & Stone Finishes	20 days	Wed 15/6/11	Thu 7/7/11
144	Suspened Ceiling Works	20 days	Sat 4/6/11	Mon 27/6/11
145	Aluminium Glazing works	28 days	Tue 28/6/11	Fri 29/7/11
146	Timber Strip Flooring	40 days	Sat 30/7/11	Wed 14/9/11
147	Painting (Internal)	12 days	Thu 15/9/11	Wed 28/9/11
148	Kitchen Cabinet/Wardrobes	36 days	Thu 29/9/11	Wed 9/11/11
149	Vanity Counter/ Cabinet/ Mirror Cabinet	36 days	Sat 15/10/11	Fri 25/11/11
150	Door Panels & Shower Screens	28 days	Sat 26/11/11	Sat 24/12/11
151	**2ND STOREY**	**209 days**	**Fri 27/5/11**	**Tue 24/1/12**
152	Ceiling Skimming	15 days	Fri 27/5/11	Mon 13/6/11
153	Brick Laying	28 days	Wed 1/6/11	Sat 2/7/11
154	Insatallation of Door & Window Frames	24 days	Thu 9/6/11	Wed 6/7/11
155	Wall Plastering	28 days	Mon 13/6/11	Thu 14/7/11
156	Waterproofing	20 days	Tue 21/6/11	Wed 13/7/11
157	Floor & Wall Screeds	20 days	Mon 27/6/11	Tue 19/7/11
158	Tiling & Stone Finishes	20 days	Wed 13/7/11	Thu 4/8/11
159	Suspened Ceiling Works	20 days	Sat 2/7/11	Mon 25/7/11
160	Aluminium Glazing works	28 days	Tue 26/7/11	Fri 26/8/11
161	Timber Strip Flooring	40 days	Sat 27/8/11	Wed 12/10/11
162	Painting (Internal)	12 days	Thu 13/10/11	Wed 26/10/11
163	Kitchen Cabinet/Wardrobes	36 days	Thu 27/10/11	Tue 6/12/11
164	Vanity Counter/ Cabinet/ Mirror Cabinet	36 days	Sat 12/11/11	Tue 20/12/11
165	Door Panels & Shower Screens	28 days	Wed 21/12/11	Tue 24/1/12



Prepared by: Tan Thiam Huat
Date: 14/10/2010

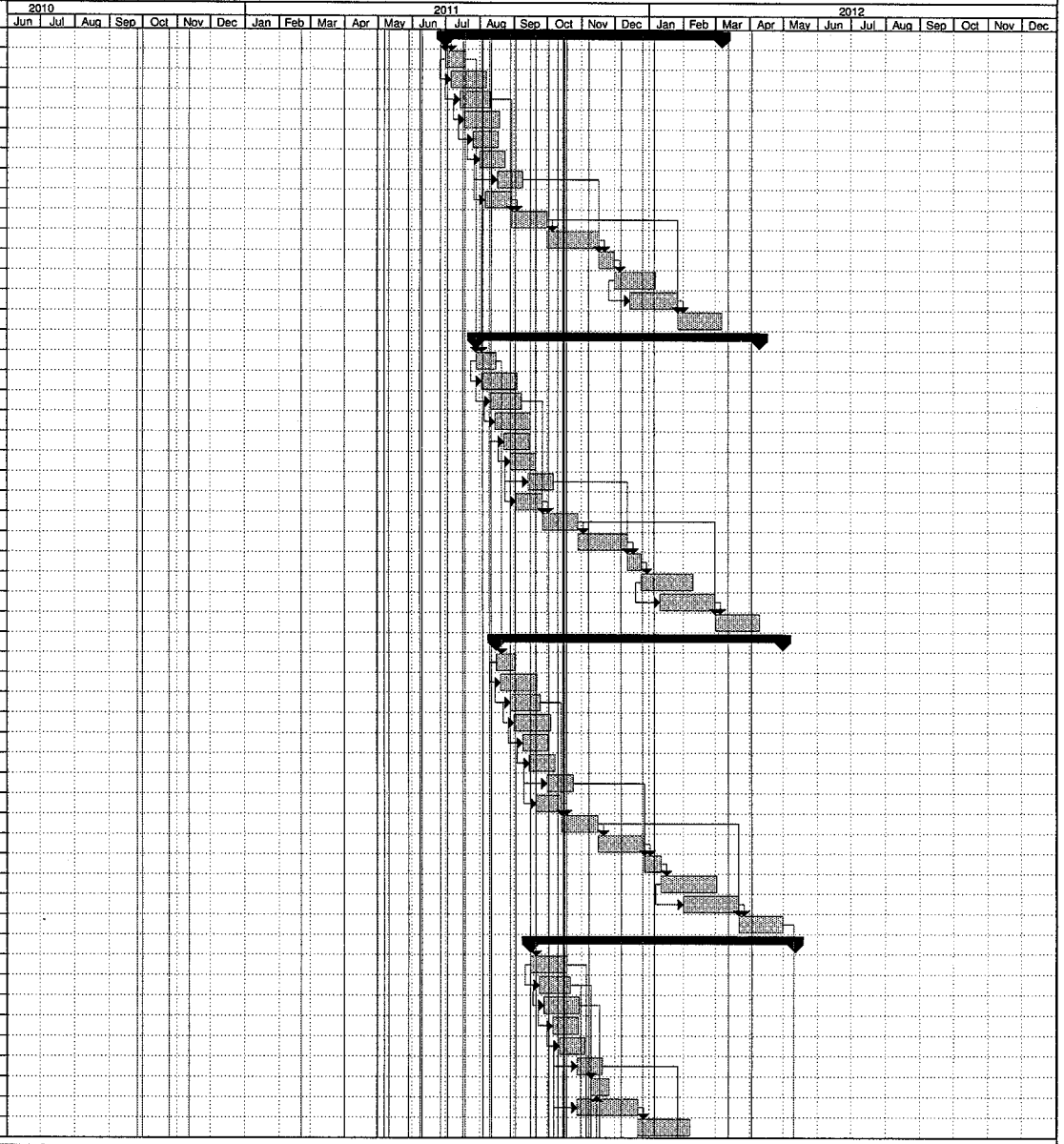
Task | Milestone | Project Summary | External Milestone | Critical Task
Progress | Summary | External Tasks | Deadline

REVISION 2

TERRENE AT BUKIT TIMAH
CONSTRUCTION PROGRAMME

UNISON CONSTRUCTION PTE LTD
CONTRACT PERIOD: 16/08/2010 - 15/02/2013

ID	Task Name	Duration	Start	Finish
166	**3RD STOREY**	**209 days**	**Fri 1/7/11**	**Tue 6/3/12**
167	Ceiling Skimming	15 days	Fri 1/7/11	Mon 18/7/11
168	Brick Laying	28 days	Wed 6/7/11	Sat 6/8/11
169	Insatallation of Door & Window Frames	24 days	Thu 14/7/11	Wed 10/8/11
170	Wall Plastering	28 days	Mon 18/7/11	Thu 18/8/11
171	Waterproofing	20 days	Tue 26/7/11	Wed 17/8/11
172	Floor & Wall Screeds	20 days	Mon 1/8/11	Tue 23/8/11
173	Tiling & Stone Finishes	20 days	Wed 17/8/11	Thu 8/9/11
174	Suspened Ceiling Works	20 days	Sat 6/8/11	Mon 29/8/11
175	Aluminium Glazing works	28 days	Tue 30/8/11	Fri 30/9/11
176	Timber Strip Flooring	40 days	Sat 1/10/11	Wed 16/11/11
177	Painting (Internal)	12 days	Thu 17/11/11	Wed 30/11/11
178	Kitchen Cabinet/Wardrobes	36 days	Thu 1/12/11	Fri 6/1/12
179	Vanity Counter/ Cabinet/ Mirror Cabinet	36 days	Thu 15/12/11	Thu 26/1/12
180	Door Panels & Shower Screens	28 days	Fri 27/1/12	Tue 6/3/12
181	**4TH STOREY**	**209 days**	**Fri 29/7/11**	**Mon 9/4/12**
182	Ceiling Skimming	15 days	Fri 29/7/11	Mon 15/8/11
183	Brick Laying	28 days	Wed 3/8/11	Sat 3/9/11
184	Insatallation of Door & Window Frames	24 days	Thu 11/8/11	Wed 7/9/11
185	Wall Plastering	28 days	Mon 15/8/11	Thu 15/9/11
186	Waterproofing	20 days	Tue 23/8/11	Wed 14/9/11
187	Floor & Wall Screeds	20 days	Mon 29/8/11	Tue 20/9/11
188	Tiling & Stone Finishes	20 days	Wed 14/9/11	Thu 6/10/11
189	Suspened Ceiling Works	20 days	Sat 3/9/11	Mon 26/9/11
190	Aluminium Glazing works	28 days	Tue 27/9/11	Fri 28/10/11
191	Timber Strip Flooring	40 days	Sat 29/10/11	Mon 12/12/11
192	Painting (Internal)	12 days	Tue 13/12/11	Sat 24/12/11
193	Kitchen Cabinet/Wardrobes	36 days	Sun 25/12/11	Thu 9/2/12
194	Vanity Counter/ Cabinet/ Mirror Cabinet	36 days	Wed 11/1/12	Wed 29/2/12
195	Door Panels & Shower Screens	28 days	Thu 1/3/12	Mon 9/4/12
196	**5TH STOREY**	**209 days**	**Tue 16/8/11**	**Mon 30/4/12**
197	Ceiling Skimming	15 days	Tue 16/8/11	Thu 1/9/11
198	Brick Laying	28 days	Sat 20/8/11	Wed 21/9/11
199	Insatallation of Door & Window Frames	24 days	Mon 29/8/11	Sat 24/9/11
200	Wall Plastering	28 days	Thu 1/9/11	Mon 3/10/11
201	Waterproofing	20 days	Fri 9/9/11	Sat 1/10/11
202	Floor & Wall Screeds	20 days	Thu 15/9/11	Fri 7/10/11
203	Tiling & Stone Finishes	20 days	Sat 1/10/11	Mon 24/10/11
204	Suspened Ceiling Works	20 days	Wed 21/9/11	Thu 13/10/11
205	Aluminium Glazing works	28 days	Fri 14/10/11	Tue 15/11/11
206	Timber Strip Flooring	40 days	Wed 16/11/11	Tue 27/12/11
207	Painting (Internal)	12 days	Wed 28/12/11	Wed 11/1/12
208	Kitchen Cabinet/Wardrobes	36 days	Thu 12/1/12	Thu 1/3/12
209	Vanity Counter/ Cabinet/ Mirror Cabinet	36 days	Wed 1/2/12	Wed 21/3/12
210	Door Panels & Shower Screens	28 days	Thu 22/3/12	Mon 30/4/12
211	**ROOF ATTIC/ TERRACE/ METAL ROOF**	**191 days**	**Fri 16/9/11**	**Fri 11/5/12**
212	Brick Laying	28 days	Fri 16/9/11	Tue 18/10/11
213	Insatallation of Door & Window Frames	24 days	Sat 24/9/11	Fri 21/10/11
214	Wall Plastering	28 days	Wed 28/9/11	Sat 29/10/11
215	Waterproofing	20 days	Thu 6/10/11	Fri 28/10/11
216	Floor & Wall Screeds	20 days	Wed 12/10/11	Thu 3/11/11
217	Tiling & Stone Finishes	20 days	Fri 28/10/11	Sat 19/11/11
218	Timber Trellies	14 days	Thu 10/11/11	Fri 25/11/11
219	Timber Raised Platform	50 days	Fri 28/10/11	Wed 21/12/11
220	Jacuzzi	36 days	Thu 22/12/11	Mon 6/2/12



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Date: 14/10/2010

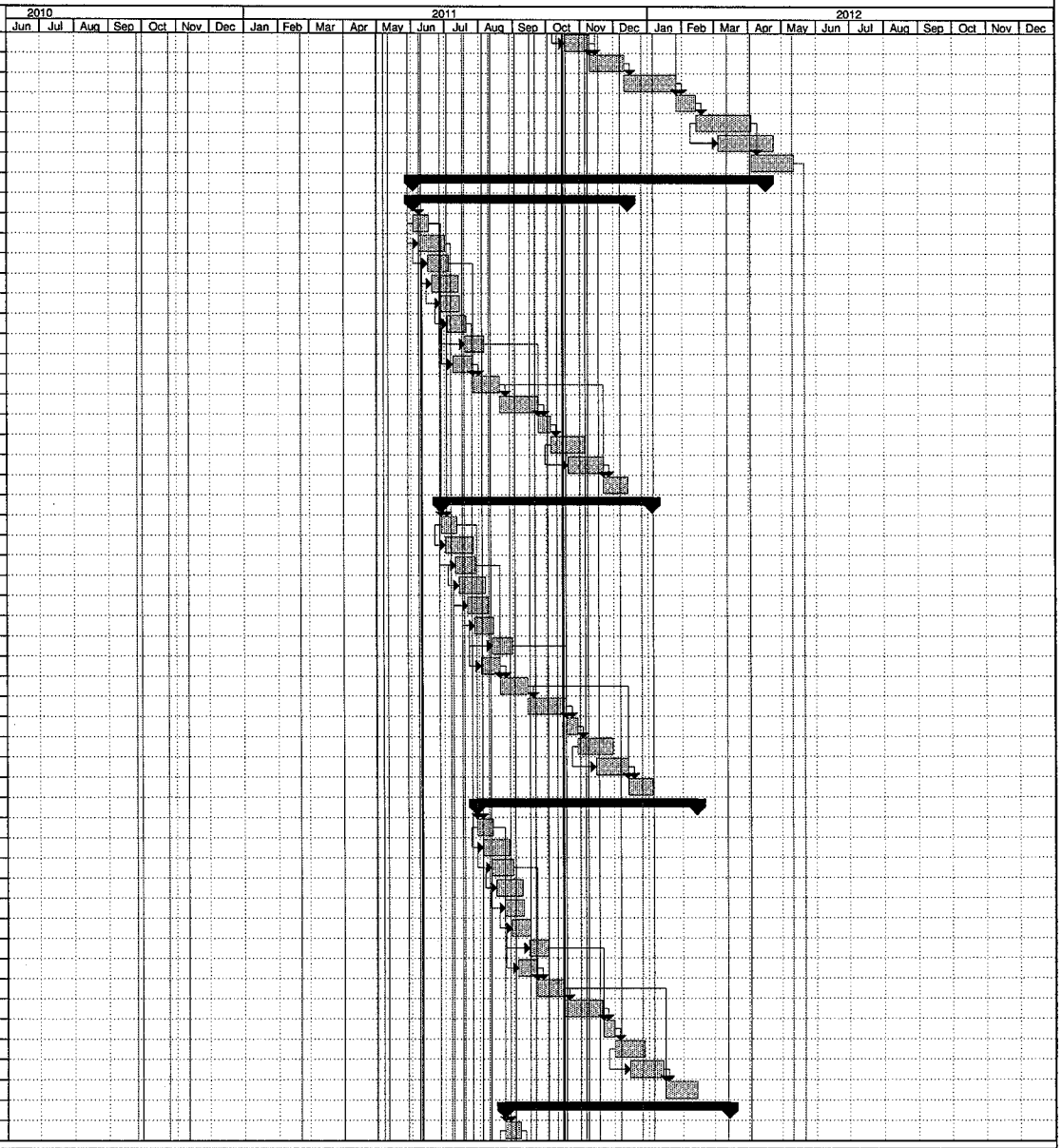
Task | Progress | Milestone | Summary | Project Summary | External Tasks | External Milestone | Deadline | Critical Task

REVISION 2

TERRENE AT BUKIT TIMAH
CONSTRUCTION PROGRAMME

UNISON CONSTRUCTION PTE LTD
CONTRACT PERIOD: 16/08/2010 - 15/02/2013

ID	Task Name	Duration	Start	Finish
221	Suspened Ceiling Works	20 days	Tue 18/10/11	Wed 9/11/11
222	Aluminium Glazing works	28 days	Thu 10/11/11	Sat 10/12/11
223	Timber Strip Flooring	40 days	Sun 11/12/11	Thu 26/1/12
224	Painting (Internal)	12 days	Fri 27/1/12	Mon 13/2/12
225	Wardrobes	36 days	Tue 14/2/12	Tue 3/4/12
226	Vanity Counter/ Cabinet/ Mirror Cabinet	36 days	Mon 5/3/12	Mon 23/4/12
227	Door Panels & Shower Screens	28 days	Wed 4/4/12	Fri 11/5/12
228	**BLOCK 119/ 121/ 123**	**262 days**	**Fri 3/6/11**	**Mon 16/4/12**
229	**1ST STOREY**	**168 days**	**Fri 3/6/11**	**Tue 13/12/11**
230	Ceiling Skimming	12 days	Fri 3/6/11	Thu 16/6/11
231	Brick Laying	21 days	Wed 8/6/11	Fri 1/7/11
232	Insatallation of Door & Window Frames	16 days	Thu 16/6/11	Mon 4/7/11
233	Wall Plastering	21 days	Mon 20/6/11	Wed 13/7/11
234	Waterproofing	15 days	Tue 28/6/11	Thu 14/7/11
235	Floor & Wall Screeds	15 days	Mon 4/7/11	Wed 20/7/11
236	Tiling & Stone Finishes	15 days	Wed 20/7/11	Fri 5/8/11
237	Suspened Ceiling Works	15 days	Sat 9/7/11	Tue 26/7/11
238	Aluminium Glazing works	21 days	Wed 27/7/11	Fri 19/8/11
239	Timber Strip Flooring	30 days	Sat 20/8/11	Fri 23/9/11
240	Painting (Internal)	9 days	Sat 24/9/11	Tue 4/10/11
241	Kitchen Cabinet/Wardrobes	27 days	Wed 5/10/11	Fri 4/11/11
242	Vanity Counter/ Cabinet/ Mirror Cabinet	27 days	Fri 21/10/11	Mon 21/11/11
243	Door Panels & Shower Screens	21 days	Tue 22/11/11	Tue 13/12/11
244	**2ND STOREY**	**168 days**	**Tue 28/6/11**	**Wed 4/1/12**
245	Ceiling Skimming	12 days	Tue 28/6/11	Mon 11/7/11
246	Brick Laying	21 days	Sat 2/7/11	Tue 26/7/11
247	Insatallation of Door & Window Frames	16 days	Mon 11/7/11	Thu 28/7/11
248	Wall Plastering	21 days	Thu 14/7/11	Sat 6/8/11
249	Waterproofing	15 days	Fri 22/7/11	Mon 8/8/11
250	Floor & Wall Screeds	15 days	Thu 28/7/11	Sat 13/8/11
251	Tiling & Stone Finishes	15 days	Sat 13/8/11	Tue 30/8/11
252	Suspened Ceiling Works	15 days	Wed 3/8/11	Fri 19/8/11
253	Aluminium Glazing works	21 days	Sat 20/8/11	Tue 13/9/11
254	Timber Strip Flooring	30 days	Wed 14/9/11	Tue 18/10/11
255	Painting (Internal)	9 days	Wed 19/10/11	Fri 28/10/11
256	Kitchen Cabinet/Wardrobes	27 days	Sat 29/10/11	Tue 29/11/11
257	Vanity Counter/ Cabinet/ Mirror Cabinet	27 days	Tue 15/11/11	Tue 13/12/11
258	Door Panels & Shower Screens	21 days	Wed 14/12/11	Wed 4/1/12
259	**3RD STOREY**	**168 days**	**Sat 30/7/11**	**Mon 13/2/12**
260	Ceiling Skimming	12 days	Sat 30/7/11	Fri 12/8/11
261	Brick Laying	21 days	Thu 4/8/11	Sat 27/8/11
262	Insatallation of Door & Window Frames	16 days	Fri 12/8/11	Tue 30/8/11
263	Wall Plastering	21 days	Tue 16/8/11	Thu 8/9/11
264	Waterproofing	15 days	Wed 24/8/11	Fri 9/9/11
265	Floor & Wall Screeds	15 days	Tue 30/8/11	Thu 15/9/11
266	Tiling & Stone Finishes	15 days	Thu 15/9/11	Sat 1/10/11
267	Suspened Ceiling Works	15 days	Mon 5/9/11	Wed 21/9/11
268	Aluminium Glazing works	21 days	Thu 22/9/11	Sat 15/10/11
269	Timber Strip Flooring	30 days	Mon 17/10/11	Sat 19/11/11
270	Painting (Internal)	9 days	Mon 21/11/11	Wed 30/11/11
271	Kitchen Cabinet/Wardrobes	27 days	Thu 1/12/11	Tue 27/12/11
272	Vanity Counter/ Cabinet/ Mirror Cabinet	27 days	Thu 15/12/11	Fri 13/1/12
273	Door Panels & Shower Screens	21 days	Mon 16/1/12	Mon 13/2/12
274	**4TH STOREY**	**168 days**	**Wed 24/8/11**	**Tue 13/3/12**
275	Ceiling Skimming	12 days	Wed 24/8/11	Tue 6/9/11



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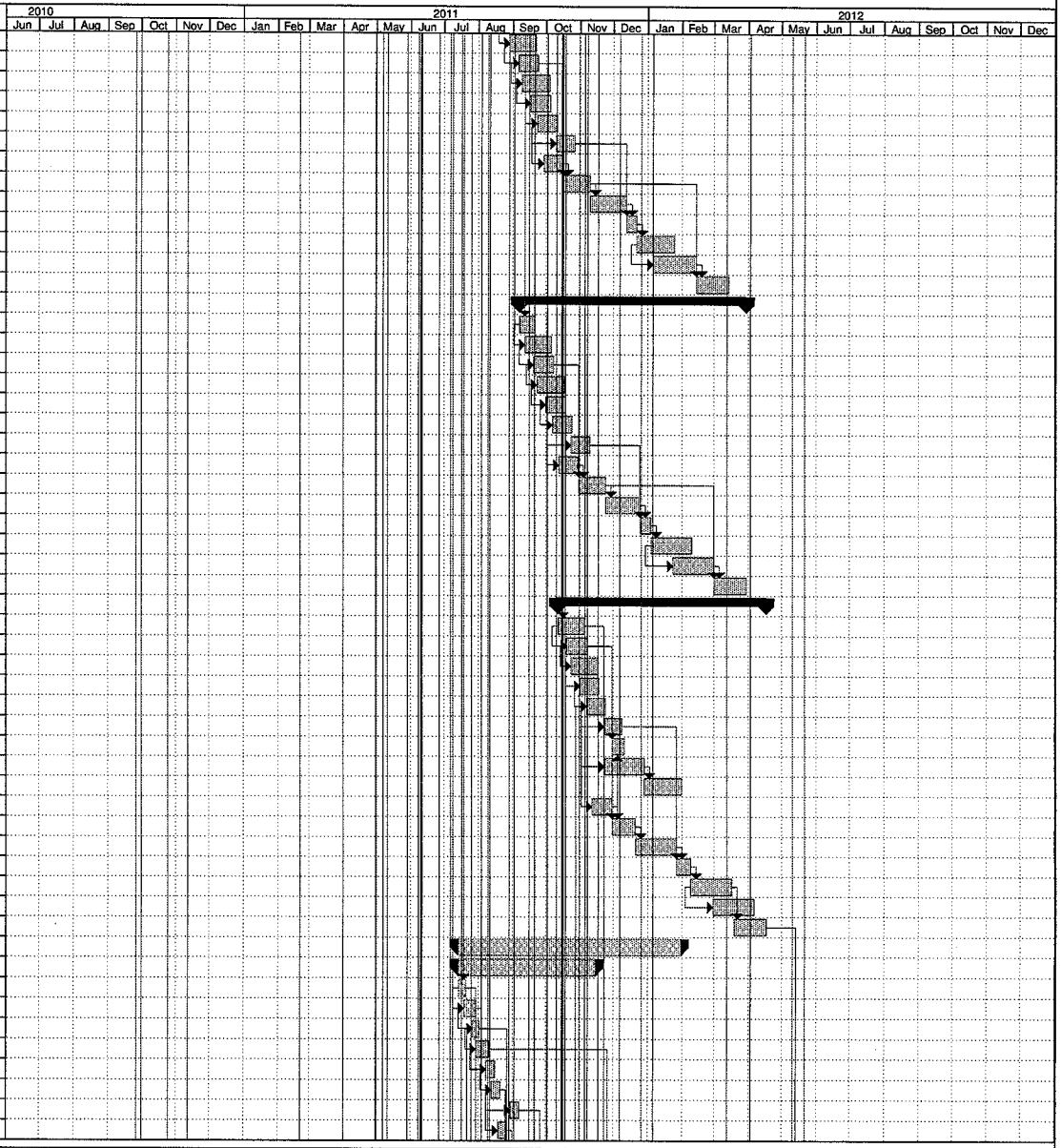
Task | Milestone | Project Summary | External Milestone | Critical Task
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REVISION 2

TERRENE AT BUKIT TIMAH
CONSTRUCTION PROGRAMME

UNISON CONSTRUCTION PTE LTD
CONTRACT PERIOD: 16/08/2010 - 15/02/2013

ID	Task Name	Duration	Start	Finish
276	Brick Laying	21 days	Mon 29/8/11	Wed 21/9/11
277	Insatallation of Door & Window Frames	16 days	Tue 6/9/11	Fri 23/9/11
278	Wall Plastering	21 days	Fri 9/9/11	Mon 3/10/11
279	Waterproofing	15 days	Sat 17/9/11	Tue 4/10/11
280	Floor & Wall Screeds	15 days	Fri 23/9/11	Mon 10/10/11
281	Tiling & Stone Finishes	15 days	Mon 10/10/11	Wed 26/10/11
282	Suspened Ceiling Works	15 days	Thu 29/9/11	Sat 15/10/11
283	Aluminium Glazing works	21 days	Mon 17/10/11	Wed 9/11/11
284	Timber Strip Flooring	30 days	Thu 10/11/11	Mon 12/12/11
285	Painting (Internal)	9 days	Tue 13/12/11	Wed 21/12/11
286	Kitchen Cabinet/Wardrobes	27 days	Thu 22/12/11	Tue 24/1/12
287	Vanity Counter/ Cabinet/ Mirror Cabinet	27 days	Fri 6/1/12	Mon 13/2/12
288	Door Panels & Shower Screens	21 days	Tue 14/2/12	Tue 13/3/12
289	**5TH STOREY**	**168 days**	**Wed 7/9/11**	**Thu 29/3/12**
290	Ceiling Skimming	12 days	Wed 7/9/11	Tue 20/9/11
291	Brick Laying	21 days	Mon 12/9/11	Wed 5/10/11
292	Insatallation of Door & Window Frames	16 days	Tue 20/9/11	Fri 7/10/11
293	Wall Plastering	21 days	Fri 23/9/11	Mon 17/10/11
294	Waterproofing	15 days	Sat 1/10/11	Tue 18/10/11
295	Floor & Wall Screeds	15 days	Fri 7/10/11	Mon 24/10/11
296	Tiling & Stone Finishes	15 days	Mon 24/10/11	Wed 9/11/11
297	Suspened Ceiling Works	15 days	Thu 13/10/11	Sat 29/10/11
298	Aluminium Glazing works	21 days	Mon 31/10/11	Wed 23/11/11
299	Timber Strip Flooring	30 days	Thu 24/11/11	Sat 24/12/11
300	Painting (Internal)	9 days	Sun 25/12/11	Tue 3/1/12
301	Kitchen Cabinet/Wardrobes	27 days	Wed 4/1/12	Thu 9/2/12
302	Vanity Counter/ Cabinet/ Mirror Cabinet	27 days	Tue 24/1/12	Wed 29/2/12
303	Door Panels & Shower Screens	21 days	Thu 1/3/12	Thu 29/3/12
304	**ROOF ATTIC/ TERRACE/ METAL ROOF**	**150 days**	**Wed 12/10/11**	**Mon 16/4/12**
305	Brick Laying	21 days	Wed 12/10/11	Fri 4/11/11
306	Insatallation of Door & Window Frames	16 days	Thu 20/10/11	Mon 7/11/11
307	Wall Plastering	21 days	Mon 24/10/11	Wed 16/11/11
308	Waterproofing	15 days	Tue 1/11/11	Thu 17/11/11
309	Floor & Wall Screeds	15 days	Mon 7/11/11	Wed 23/11/11
310	Tiling & Stone Finishes	15 days	Wed 23/11/11	Thu 8/12/11
311	Timber Trellies	11 days	Wed 30/11/11	Sat 10/12/11
312	Timber Raised Platform	35 days	Wed 23/11/11	Wed 28/12/11
313	Jacuzzi	25 days	Thu 29/12/11	Tue 31/1/12
314	Suspened Ceiling Works	15 days	Sat 12/11/11	Tue 29/11/11
315	Aluminium Glazing works	21 days	Wed 30/11/11	Tue 20/12/11
316	Timber Strip Flooring	30 days	Wed 21/12/11	Thu 26/1/12
317	Painting (Internal)	9 days	Fri 27/1/12	Wed 8/2/12
318	Wardrobes	27 days	Thu 9/2/12	Fri 16/3/12
319	Vanity Counter/ Cabinet/ Mirror Cabinet	27 days	Wed 29/2/12	Thu 5/4/12
320	Door Panels & Shower Screens	21 days	Mon 19/3/12	Mon 16/4/12
321	**BLOCK 125**	**172 days**	**Thu 14/7/11**	**Mon 30/1/12**
322	**1ST STOREY**	**106 days**	**Thu 14/7/11**	**Mon 14/11/11**
323	Ceiling Skimming	6 days	Thu 14/7/11	Wed 20/7/11
324	Brick Laying	10 days	Tue 19/7/11	Fri 29/7/11
325	Insatallation of Door & Window Frames	5 days	Wed 27/7/11	Mon 1/8/11
326	Wall Plastering	10 days	Sat 30/7/11	Wed 10/8/11
327	Waterproofing	7 days	Mon 8/8/11	Mon 15/8/11
328	Floor & Wall Screeds	7 days	Sat 13/8/11	Sat 20/8/11
329	Tiling & Stone Finishes	7 days	Tue 30/8/11	Tue 6/9/11
330	Suspened Ceiling Works	7 days	Fri 19/8/11	Fri 26/8/11



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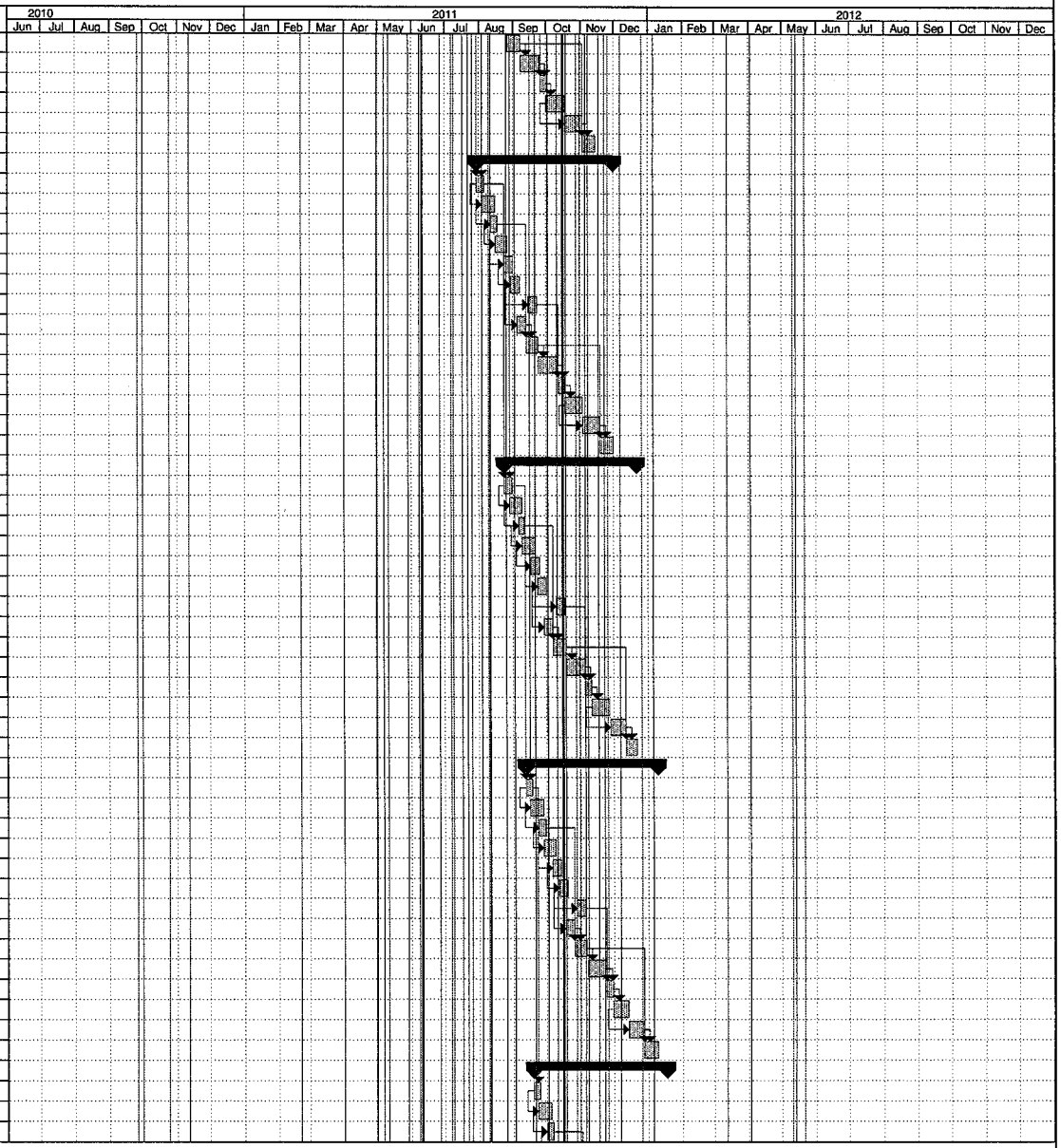
Task | Progress | Milestone | Summary | Project Summary | External Tasks | External Milestone | Deadline | Critical Task

REVISION 2

TERRENE AT BUKIT TIMAH
CONSTRUCTION PROGRAMME

UNISON CONSTRUCTION PTE LTD
CONTRACT PERIOD: 16/08/2010 - 15/02/2013

ID	Task Name	Duration	Start	Finish
331	Aluminium Glazing works	10 days	Sat 27/8/11	Wed 7/9/11
332	Timber Strip Flooring	15 days	Thu 8/9/11	Sat 24/9/11
333	Painting (Internal)	5 days	Mon 26/9/11	Fri 30/9/11
334	Kitchen Cabinet/Wardrobes	14 days	Sat 1/10/11	Mon 17/10/11
335	Vanity Counter/ Cabinet/ Mirror Cabinet	14 days	Tue 18/10/11	Wed 2/11/11
336	Door Panels & Shower Screens	10 days	Thu 3/11/11	Mon 14/11/11
337	**2ND STOREY**	**106 days**	**Sat 30/7/11**	**Wed 30/11/11**
338	Ceiling Skimming	6 days	Sat 30/7/11	Fri 5/8/11
339	Brick Laying	10 days	Thu 4/8/11	Mon 15/8/11
340	Insatallation of Door & Window Frames	5 days	Fri 12/8/11	Wed 17/8/11
341	Wall Plastering	10 days	Tue 16/8/11	Fri 26/8/11
342	Waterproofing	7 days	Wed 24/8/11	Wed 31/8/11
343	Floor & Wall Screeds	7 days	Tue 30/8/11	Tue 6/9/11
344	Tiling & Stone Finishes	7 days	Thu 15/9/11	Thu 22/9/11
345	Suspened Ceiling Works	7 days	Mon 5/9/11	Mon 12/9/11
346	Aluminium Glazing works	10 days	Tue 13/9/11	Fri 23/9/11
347	Timber Strip Flooring	15 days	Sat 24/9/11	Tue 11/10/11
348	Painting (Internal)	5 days	Wed 12/10/11	Mon 17/10/11
349	Kitchen Cabinet/Wardrobes	14 days	Tue 18/10/11	Wed 2/11/11
350	Vanity Counter/ Cabinet/ Mirror Cabinet	14 days	Thu 3/11/11	Fri 18/11/11
351	Door Panels & Shower Screens	10 days	Sat 19/11/11	Wed 30/11/11
352	**3RD STOREY**	**106 days**	**Wed 24/8/11**	**Wed 21/12/11**
353	Ceiling Skimming	6 days	Wed 24/8/11	Tue 30/8/11
354	Brick Laying	10 days	Mon 29/8/11	Thu 8/9/11
355	Insatallation of Door & Window Frames	5 days	Tue 6/9/11	Sat 10/9/11
356	Wall Plastering	10 days	Fri 9/9/11	Tue 20/9/11
357	Waterproofing	7 days	Sat 17/9/11	Sat 24/9/11
358	Floor & Wall Screeds	7 days	Fri 23/9/11	Fri 30/9/11
359	Tiling & Stone Finishes	7 days	Mon 10/10/11	Mon 17/10/11
360	Suspened Ceiling Works	7 days	Thu 29/9/11	Thu 6/10/11
361	Aluminium Glazing works	10 days	Fri 7/10/11	Tue 18/10/11
362	Timber Strip Flooring	15 days	Wed 19/10/11	Fri 4/11/11
363	Painting (Internal)	5 days	Sat 5/11/11	Thu 10/11/11
364	Kitchen Cabinet/Wardrobes	14 days	Fri 11/11/11	Sat 26/11/11
365	Vanity Counter/ Cabinet/ Mirror Cabinet	14 days	Mon 28/11/11	Sun 11/12/11
366	Door Panels & Shower Screens	10 days	Mon 12/12/11	Wed 21/12/11
367	**4TH STOREY**	**106 days**	**Mon 12/9/11**	**Mon 9/1/12**
368	Ceiling Skimming	6 days	Mon 12/9/11	Sat 17/9/11
369	Brick Laying	10 days	Fri 16/9/11	Tue 27/9/11
370	Insatallation of Door & Window Frames	5 days	Sat 24/9/11	Thu 29/9/11
371	Wall Plastering	10 days	Wed 28/9/11	Sat 8/10/11
372	Waterproofing	7 days	Thu 6/10/11	Thu 13/10/11
373	Floor & Wall Screeds	7 days	Wed 12/10/11	Wed 19/10/11
374	Tiling & Stone Finishes	7 days	Fri 28/10/11	Fri 4/11/11
375	Suspened Ceiling Works	7 days	Tue 18/10/11	Tue 25/10/11
376	Aluminium Glazing works	10 days	Wed 26/10/11	Sat 5/11/11
377	Timber Strip Flooring	15 days	Mon 7/11/11	Wed 23/11/11
378	Painting (Internal)	5 days	Thu 24/11/11	Tue 29/11/11
379	Kitchen Cabinet/Wardrobes	14 days	Wed 30/11/11	Tue 13/12/11
380	Vanity Counter/ Cabinet/ Mirror Cabinet	14 days	Wed 14/12/11	Tue 27/12/11
381	Door Panels & Shower Screens	10 days	Wed 28/12/11	Mon 9/1/12
382	**5TH STOREY**	**106 days**	**Mon 19/9/11**	**Tue 17/1/12**
383	Ceiling Skimming	6 days	Mon 19/9/11	Sat 24/9/11
384	Brick Laying	10 days	Fri 23/9/11	Tue 4/10/11
385	Insatallation of Door & Window Frames	5 days	Sat 1/10/11	Thu 6/10/11



Prepared by: Tan Thiam Huat
Date: 14/10/2010

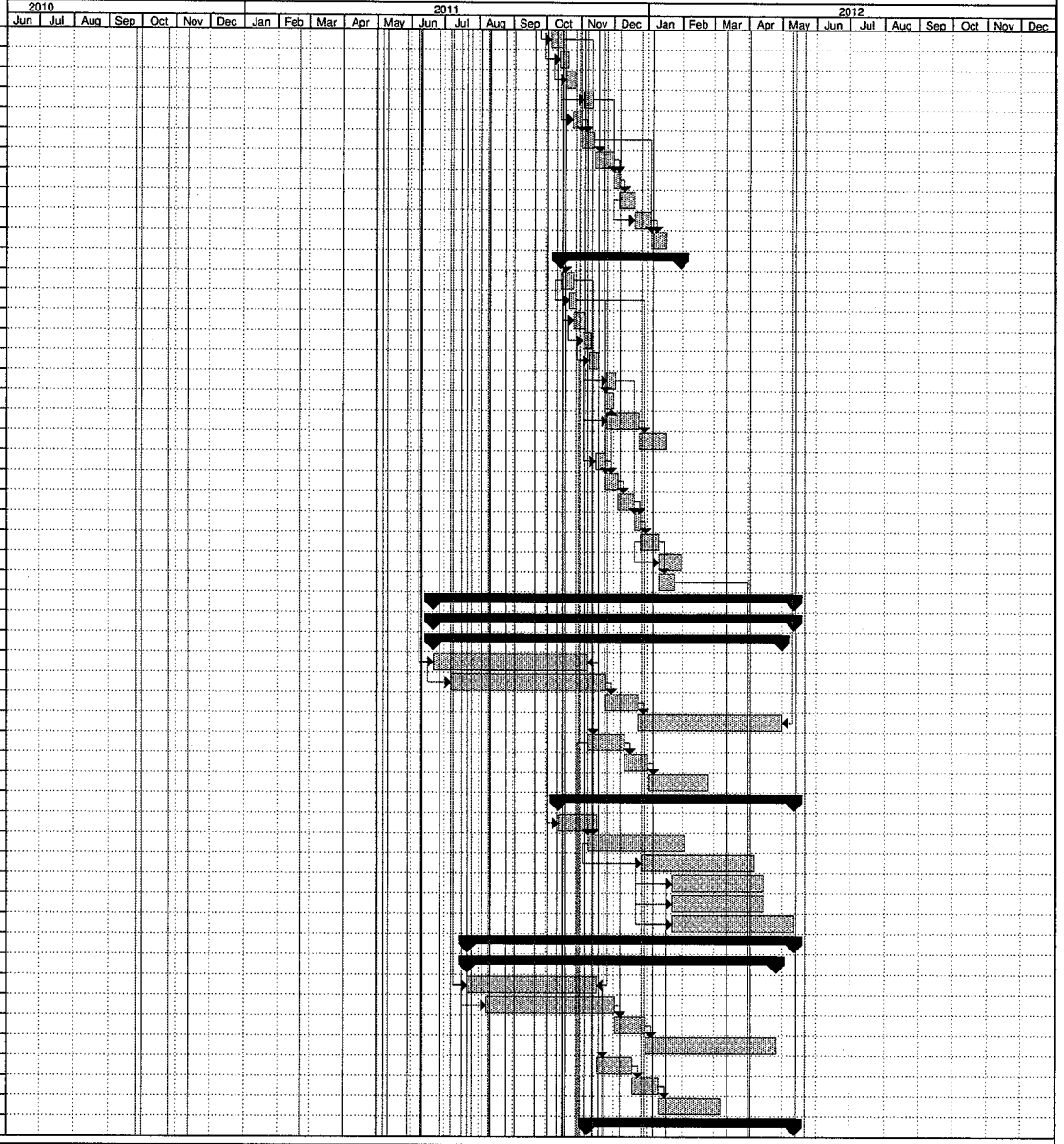
Task | Milestone | Project Summary | External Milestone | Critical Task
Progress | Summary | External Tasks | Deadline

REVISION 2

TERRENE AT BUKIT TIMAH
CONSTRUCTION PROGRAMME

UNISON CONSTRUCTION PTE LTD
CONTRACT PERIOD: 16/08/2010 - 15/02/2013

ID	Task Name	Duration	Start	Finish
386	Wall Plastering	10 days	Wed 5/10/11	Sat 15/10/11
387	Waterproofing	7 days	Thu 13/10/11	Thu 20/10/11
388	Floor & Wall Screeds	7 days	Wed 19/10/11	Wed 26/10/11
389	Tiling & Stone Finishes	7 days	Fri 4/11/11	Fri 11/11/11
390	Suspened Ceiling Works	7 days	Tue 25/10/11	Tue 1/11/11
391	Aluminium Glazing works	10 days	Wed 2/11/11	Sat 12/11/11
392	Timber Strip Flooring	15 days	Mon 14/11/11	Wed 30/11/11
393	Painting (Internal)	5 days	Thu 1/12/11	Mon 5/12/11
394	Kitchen Cabinet/Wardrobes	14 days	Tue 6/12/11	Mon 19/12/11
395	Vanity Counter/ Cabinet/ Mirror Cabinet	14 days	Tue 20/12/11	Tue 3/1/12
396	Door Panels & Shower Screens	10 days	Wed 4/1/12	Tue 17/1/12
397	**ROOF ATTIC/ TERRACE/ METAL ROOF**	**93 days**	**Fri 14/10/11**	**Mon 30/1/12**
398	Brick Laying	10 days	Fri 14/10/11	Tue 25/10/11
399	Insatallation of Door & Window Frames	5 days	Sat 22/10/11	Thu 27/10/11
400	Wall Plastering	10 days	Wed 26/10/11	Sat 5/11/11
401	Waterproofing	7 days	Thu 3/11/11	Thu 10/11/11
402	Floor & Wall Screeds	7 days	Wed 9/11/11	Wed 16/11/11
403	Tiling & Stone Finishes	7 days	Fri 25/11/11	Fri 2/12/11
404	Timber Trellies	6 days	Thu 24/11/11	Wed 30/11/11
405	Timber Raised Platform	28 days	Fri 25/11/11	Fri 23/12/11
406	Jacuzzi	20 days	Sat 24/12/11	Tue 17/1/12
407	Suspened Ceiling Works	8 days	Tue 15/11/11	Wed 23/11/11
408	Aluminium Glazing works	10 days	Thu 24/11/11	Sun 4/12/11
409	Timber Strip Flooring	15 days	Mon 5/12/11	Mon 19/12/11
410	Painting (Internal)	5 days	Tue 20/12/11	Sat 24/12/11
411	Wardrobes	14 days	Sun 25/12/11	Tue 10/1/12
412	Vanity Counter/ Cabinet/ Mirror Cabinet	14 days	Wed 11/1/12	Mon 30/1/12
413	Door Panels & Shower Screens	10 days	Wed 11/1/12	Tue 24/1/12
414	**ARCHITECTURAL WORKS (APT UNITS EXTERNALLY)**	**266 days**	**Tue 21/6/11**	**Fri 11/5/12**
415	**BLOCK 111/ 113/ 115/ 117**	**266 days**	**Tue 21/6/11**	**Fri 11/5/12**
416	**COMMON LOBBY/ CORRIDOR**	**257 days**	**Tue 21/6/11**	**Mon 30/4/12**
417	Wall Plastering	120 days	Tue 21/6/11	Mon 7/11/11
418	Wall Painting (1st Coat)	120 days	Thu 7/7/11	Wed 23/11/11
419	Floor Tiling	28 days	Thu 24/11/11	Thu 22/12/11
420	Service Duct Door Installation	95 days	Fri 23/12/11	Mon 30/4/12
421	Storey Shelter Staircase Skimming	30 days	Tue 8/11/11	Sat 10/12/11
422	Storey Shelter Staircase Painting (1st Coat)	21 days	Sun 11/12/11	Sat 31/12/11
423	Storey Shelter Staircase/ Landing Rendering	40 days	Mon 2/1/12	Fri 24/2/12
424	**EXTERNAL ELEVATION/ ROOF**	**169 days**	**Wed 12/10/11**	**Fri 11/5/12**
425	RC Flat Roof Secondary Roofing	30 days	Wed 12/10/11	Tue 15/11/11
426	External Plastering	75 days	Tue 8/11/11	Thu 2/2/12
427	External Painting	75 days	Mon 26/12/11	Thu 5/4/12
428	Aircon Ledge Railing	60 days	Mon 23/1/12	Fri 13/4/12
429	Balcony Glass Balustrade	60 days	Mon 23/1/12	Fri 13/4/12
430	Terracotta Louvre Screen with Support	80 days	Mon 23/1/12	Fri 11/5/12
431	**BLOCK 119/ 121/ 123**	**239 days**	**Fri 22/7/11**	**Fri 11/5/12**
432	**COMMON LOBBY/ CORRIDOR**	**227 days**	**Fri 22/7/11**	**Wed 25/4/12**
433	Wall Plastering	100 days	Fri 22/7/11	Tue 15/11/11
434	Wall Painting (1st Coat)	100 days	Mon 8/8/11	Thu 1/12/11
435	Floor Tiling	28 days	Fri 2/12/11	Thu 29/12/11
436	Service Duct Door Installation	85 days	Fri 30/12/11	Wed 25/4/12
437	Storey Shelter Staircase Skimming	30 days	Wed 16/11/11	Sat 17/12/11
438	Storey Shelter Staircase Painting (1st Coat)	21 days	Sun 18/12/11	Tue 10/1/12
439	Storey Shelter Staircase/ Landing Rendering	40 days	Wed 11/1/12	Tue 6/3/12
440	**EXTERNAL ELEVATION/ ROOF**	**147 days**	**Mon 7/11/11**	**Fri 11/5/12**



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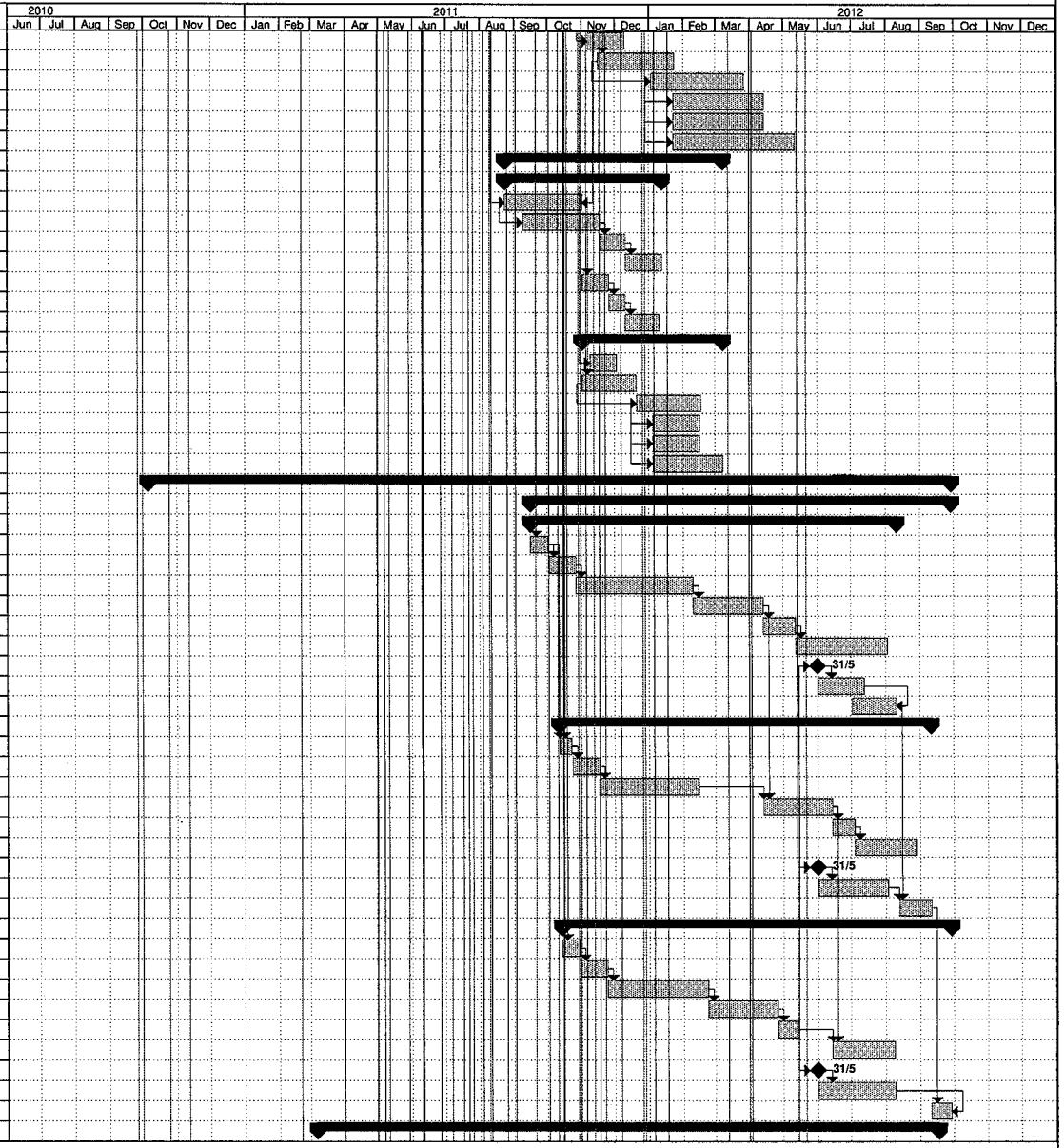
Task | Progress | Milestone | Summary | Project Summary | External Tasks | External Milestone | Deadline | Critical Task

REVISION 2

TERRENE AT BUKIT TIMAH
CONSTRUCTION PROGRAMME

UNISON CONSTRUCTION PTE LTD
CONTRACT PERIOD: 16/08/2010 - 15/02/2013

ID	Task Name	Duration	Start	Finish
441	RC Flat Roof Secondary Roofing	30 days	Mon 7/11/11	Fri 9/12/11
442	External Plastering	60 days	Wed 16/11/11	Mon 23/1/12
443	External Painting	60 days	Tue 3/1/12	Mon 26/3/12
444	Aircon Ledge Railing	60 days	Mon 23/1/12	Fri 13/4/12
445	Balcony Glass Balustrade	60 days	Mon 23/1/12	Fri 13/4/12
446	Terracotta Louvre Screen with Support	80 days	Mon 23/1/12	Fri 11/5/12
447	**BLOCK 125**	**164 days**	**Wed 24/8/11**	**Wed 7/3/12**
448	**COMMON LOBBY/ CORRIDOR**	**125 days**	**Wed 24/8/11**	**Thu 12/1/12**
449	Wall Plastering	60 days	Wed 24/8/11	Tue 1/11/11
450	Wall Painting (1st Coat)	60 days	Fri 9/9/11	Thu 17/11/11
451	Floor Tiling	21 days	Fri 18/11/11	Sat 10/12/11
452	Service Duct Door Installation	30 days	Sun 11/12/11	Thu 12/1/12
453	Storey Shelter Staircase Skimming	21 days	Wed 2/11/11	Fri 25/11/11
454	Storey Shelter Staircase Painting (1st Coat)	14 days	Sat 26/11/11	Sat 10/12/11
455	Storey Shelter Staircase/ Landing Rendering	28 days	Sun 11/12/11	Tue 10/1/12
456	**EXTERNAL ELEVATION/ ROOF**	**104 days**	**Wed 2/11/11**	**Wed 7/3/12**
457	RC Flat Roof Secondary Roofing	21 days	Wed 9/11/11	Fri 2/12/11
458	External Plastering	45 days	Wed 2/11/11	Tue 20/12/11
459	External Painting	45 days	Wed 21/12/11	Thu 16/2/12
460	Aircon Ledge Railing	30 days	Thu 5/1/12	Wed 15/2/12
461	Balcony Glass Balustrade	30 days	Thu 5/1/12	Wed 15/2/12
462	Terracotta Louvre Screen with Support	45 days	Thu 5/1/12	Wed 7/3/12
463	**M&E WORKS**	**589 days**	**Wed 6/10/10**	**Fri 28/9/12**
464	**LIFT INSTALLATIONS**	**292 days**	**Fri 16/9/11**	**Fri 28/9/12**
465	**BLOCK 111/ 113/ 115/ 117**	**257 days**	**Fri 16/9/11**	**Fri 10/8/12**
466	Handover of lift hoist way	14 days	Fri 16/9/11	Sat 1/10/11
467	Plumbing lift shaft	21 days	Mon 3/10/11	Wed 26/10/11
468	Install lift car & frame assy	90 days	Thu 27/10/11	Thu 9/2/12
469	Install landing parts & wiring works	45 days	Fri 10/2/12	Thu 12/4/12
470	Hanover lift door jamb for grouting	21 days	Fri 13/4/12	Fri 11/5/12
471	Car cage assy and car interior work	60 days	Sat 12/5/12	Thu 2/8/12
472	Request for power supply	0 days	Thu 31/5/12	Thu 31/5/12
473	Lift adjustment work	30 days	Fri 1/6/12	Thu 12/7/12
474	Lift T&C	30 days	Mon 2/7/12	Fri 10/8/12
475	**BLOCK 119/ 121/ 123**	**256 days**	**Wed 12/10/11**	**Mon 10/9/12**
476	Handover of lift hoist way	10 days	Wed 12/10/11	Sat 22/10/11
477	Plumbing lift shaft	21 days	Mon 24/10/11	Wed 16/11/11
478	Install lift car & frame assy	75 days	Thu 17/11/11	Tue 14/2/12
479	Install landing parts & wiring works	45 days	Fri 13/4/12	Wed 13/6/12
480	Hanover lift door jamb for grouting	14 days	Thu 14/6/12	Tue 3/7/12
481	Car cage assy and car interior work	40 days	Wed 4/7/12	Tue 28/8/12
482	Request for power supply	0 days	Thu 31/5/12	Thu 31/5/12
483	Lift adjustment work	45 days	Fri 1/6/12	Thu 2/8/12
484	Lift T&C	21 days	Mon 13/8/12	Mon 10/9/12
485	**BLOCK 125**	**268 days**	**Fri 14/10/11**	**Fri 28/9/12**
486	Handover of lift hoist way	14 days	Fri 14/10/11	Sat 29/10/11
487	Plumbing lift shaft	21 days	Mon 31/10/11	Wed 23/11/11
488	Install lift car & frame assy	75 days	Thu 24/11/11	Wed 22/2/12
489	Install landing parts & wiring works	45 days	Thu 23/2/12	Wed 25/4/12
490	Hanover lift door jamb for grouting	14 days	Thu 26/4/12	Mon 14/5/12
491	Car cage assy and car interior work	40 days	Thu 14/6/12	Wed 8/8/12
492	Request for power supply	0 days	Thu 31/5/12	Thu 31/5/12
493	Lift adjustment work	50 days	Fri 1/6/12	Thu 9/8/12
494	Lift T&C	14 days	Tue 11/9/12	Fri 28/9/12
495	**ELECTRICAL INSTALLATION AND SECURITY SYSTEM**	**450 days**	**Mon 7/3/11**	**Mon 17/9/12**



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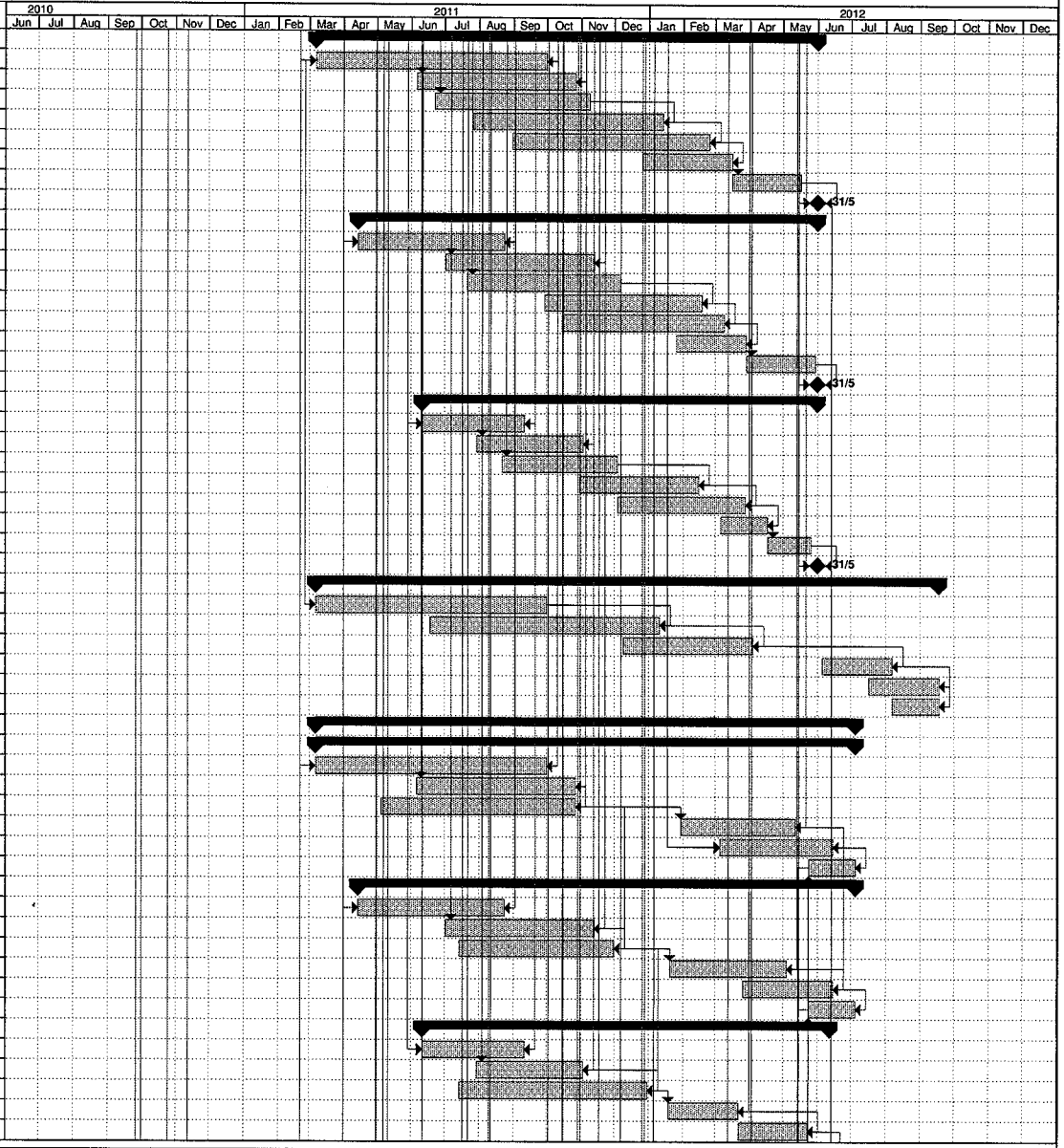
Task | Milestone | Project Summary | External Milestone | Critical Task
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REVISION 2

TERRENE AT BUKIT TIMAH
CONSTRUCTION PROGRAMME

UNISON CONSTRUCTION PTE LTD
CONTRACT PERIOD: 16/08/2010 - 15/02/2013

ID	Task Name	Duration	Start	Finish
496	**BLOCK 111/ 113/ 115/ 117**	**373 days**	**Mon 7/3/11**	**Thu 31/5/12**
497	Concealed pipe works	180 days	Mon 7/3/11	Fri 30/9/11
498	Concealed conduit works	123 days	Mon 6/6/11	Wed 26/10/11
499	Sub circuit wiring (elect, Telecom, SCV)	120 days	Wed 22/6/11	Tue 8/11/11
500	Sub main cables in risers	150 days	Wed 27/7/11	Fri 13/1/12
501	Submain cables from LT to metering board	150 days	Wed 31/8/11	Fri 24/2/12
502	DB & internal termination	60 days	Mon 26/12/11	Thu 15/3/12
503	Switches Socket and Power Point outlets (Final fix)	45 days	Fri 16/3/12	Wed 16/5/12
504	Power turn on	0 days	Thu 31/5/12	Thu 31/5/12
505	**BLOCK 119/ 121/ 123**	**340 days**	**Thu 14/4/11**	**Thu 31/5/12**
506	Concealed pipe works	114 days	Thu 14/4/11	Tue 23/8/11
507	Concealed conduit works	115 days	Sat 2/7/11	Sat 12/11/11
508	Sub circuit wiring (elect, Telecom, SCV)	120 days	Thu 21/7/11	Tue 6/12/11
509	Sub main cables in risers	120 days	Thu 29/9/11	Fri 17/2/12
510	Submain cables from LT to metering board	120 days	Sat 15/10/11	Thu 8/3/12
511	DB & internal termination	45 days	Thu 26/1/12	Wed 28/3/12
512	Switches Socket and Power Point outlets (Final fix)	45 days	Thu 29/3/12	Tue 29/5/12
513	Power turn-on	0 days	Thu 31/5/12	Thu 31/5/12
514	**BLOCK 125**	**289 days**	**Sat 11/6/11**	**Thu 31/5/12**
515	Concealed pipe works	79 days	Sat 11/6/11	Sat 10/9/11
516	Concealed conduit works	82 days	Sat 30/7/11	Wed 2/11/11
517	Sub circuit wiring (elect, Telecom, SCV)	90 days	Mon 22/8/11	Sat 3/12/11
518	Sub main cables in risers	90 days	Mon 31/10/11	Tue 14/2/12
519	Submain cables from LT to metering board	90 days	Sun 4/12/11	Tue 27/3/12
520	DB & internal termination	30 days	Tue 6/3/12	Mon 16/4/12
521	Switches Socket and Power Point outlets (Final fix)	30 days	Tue 17/4/12	Fri 25/5/12
522	Power turn on	0 days	Thu 31/5/12	Thu 31/5/12
523	**Security System**	**450 days**	**Mon 7/3/11**	**Mon 17/9/12**
524	Concealed pipe works	180 days	Mon 7/3/11	Fri 30/9/11
525	Cabling Works	180 days	Sat 18/6/11	Tue 10/1/12
526	Install Audio Video Intercom	90 days	Fri 9/12/11	Tue 3/4/12
527	Install CCTV	45 days	Tue 5/6/12	Mon 6/8/12
528	Card Access System	45 days	Tue 17/7/12	Mon 17/9/12
529	Carpark Barrier with Access Control System	30 days	Tue 7/8/12	Mon 17/9/12
530	**ACMV**	**397 days**	**Mon 7/3/11**	**Wed 4/7/12**
531	**BLOCK 111/ 113/ 115/ 117**	**397 days**	**Mon 7/3/11**	**Wed 4/7/12**
532	Concealed pipe works	180 days	Mon 7/3/11	Fri 30/9/11
533	Refrigerant pipes with insulation	123 days	Mon 6/6/11	Wed 26/10/11
534	Condensate drain pipes	150 days	Thu 5/5/11	Wed 26/10/11
535	Install FCU	75 days	Mon 30/1/12	Fri 11/5/12
536	Install CU	75 days	Mon 5/3/12	Thu 14/6/12
537	T&C	30 days	Thu 24/5/12	Wed 4/7/12
538	**BLOCK 119/ 121/ 123**	**364 days**	**Thu 14/4/11**	**Wed 4/7/12**
539	Concealed pipe works	114 days	Thu 14/4/11	Tue 23/8/11
540	Refrigerant pipes with insulation	115 days	Sat 2/7/11	Sat 12/11/11
541	Condensate drain pipes	120 days	Thu 14/7/11	Wed 30/11/11
542	Install FCU	75 days	Fri 20/1/12	Thu 3/5/12
543	Install CU	60 days	Mon 26/3/12	Thu 14/6/12
544	T&C	30 days	Thu 24/5/12	Wed 4/7/12
545	**BLOCK 125**	**296 days**	**Sat 11/6/11**	**Mon 11/6/12**
546	Concealed pipe works	79 days	Sat 11/6/11	Sat 10/9/11
547	Refrigerant pipes with insulation	82 days	Sat 30/7/11	Wed 2/11/11
548	Condensate drain pipes	150 days	Thu 14/7/11	Fri 30/12/11
549	Install FCU	45 days	Thu 19/1/12	Wed 21/3/12
550	Install CU	45 days	Thu 22/3/12	Tue 22/5/12



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Date: 14/10/2010

Task | Progress | Milestone | Summary | Project Summary | External Tasks | External Milestone | Deadline | Critical Task

REVISION 2

TERRENE AT BUKIT TIMAH
CONSTRUCTION PROGRAMME

UNISON CONSTRUCTION PTE LTD
CONTRACT PERIOD: 16/08/2010 - 15/02/2013

ID	Task Name	Duration	Start	Finish
551	T&C	30 days	Wed 2/5/12	Mon 11/6/12
552	**PLUMBING, SANITARY & GAS INSTALLATION**	**515 days**	**Wed 6/10/10**	**Mon 18/6/12**
553	**BLOCK 111/ 113/ 115/ 117**	**498 days**	**Wed 6/10/10**	**Thu 24/5/12**
554	Underground piping works	180 days	Wed 6/10/10	Mon 2/5/11
555	Concealed Pipe Works	128 days	Mon 7/3/11	Mon 1/8/11
556	Above Ground UPVC Soil/Waste Pipes	128 days	Thu 26/5/11	Fri 21/10/11
557	PPR pipe works	128 days	Thu 26/5/11	Fri 21/10/11
558	Gas pipe works	128 days	Thu 26/5/11	Fri 21/10/11
559	Pipe works to risers	120 days	Tue 2/8/11	Fri 16/12/11
560	Storage water heater	120 days	Fri 23/9/11	Fri 10/2/12
561	Water Tank & Pumps	75 days	Mon 13/2/12	Thu 24/5/12
562	Sanitary wares & fittings	45 days	Mon 26/3/12	Thu 24/5/12
563	Gas connection to appliances	30 days	Mon 16/4/12	Thu 24/5/12
564	**BLOCK 119/ 121/ 123**	**387 days**	**Wed 23/2/11**	**Wed 6/6/12**
565	Underground piping works	98 days	Wed 23/2/11	Wed 15/6/11
566	Concealed Pipe Works	151 days	Thu 14/4/11	Wed 5/10/11
567	Above Ground UPVC Soil/Waste Pipes	120 days	Tue 21/6/11	Mon 7/11/11
568	PPR pipe works	120 days	Tue 21/6/11	Mon 7/11/11
569	Gas pipe works	120 days	Tue 21/6/11	Mon 7/11/11
570	Pipe works to risers	120 days	Tue 30/8/11	Thu 12/1/12
571	Storage water heater	120 days	Tue 4/10/11	Thu 23/2/12
572	Water Tank & Pumps	75 days	Fri 24/2/12	Wed 6/6/12
573	Sanitary wares & fittings	42 days	Wed 11/4/12	Wed 6/6/12
574	Gas connection to appliances	30 days	Fri 27/4/12	Wed 6/6/12
575	**BLOCK 125**	**335 days**	**Tue 3/5/11**	**Mon 18/6/12**
576	Underground piping works	42 days	Tue 3/5/11	Mon 20/6/11
577	Concealed pipe works	128 days	Tue 21/6/11	Wed 16/11/11
578	Above Ground UPVC Soil/Waste Pipes	120 days	Thu 4/8/11	Sun 18/12/11
579	PPR pipe works	120 days	Thu 4/8/11	Sun 18/12/11
580	Gas pipe works	120 days	Thu 4/8/11	Sun 18/12/11
581	Pipe works to risers	120 days	Mon 26/9/11	Tue 14/2/12
582	Storage water heater	120 days	Thu 17/11/11	Tue 17/4/12
583	Water Tank & Pumps	45 days	Wed 18/4/12	Mon 18/6/12
584	Sanitary wares & fittings	35 days	Wed 2/5/12	Mon 18/6/12
585	Gas connection to appliances	28 days	Fri 11/5/12	Mon 18/6/12
586	**FIRE PROTECTION**	**306 days**	**Fri 5/8/11**	**Wed 29/8/12**
587	**AUTOMATIC FIRE SPRINKLER SYSTEM**	**276 days**	**Fri 5/8/11**	**Wed 18/7/12**
588	Underground piping works	30 days	Thu 19/4/12	Tue 29/5/12
589	Fire sprinkler pipes	180 days	Fri 5/8/11	Wed 7/3/12
590	Fire sprinkler heads	60 days	Thu 8/3/12	Tue 29/5/12
591	Sprinkler pumps, controls,etc	60 days	Thu 8/3/12	Tue 29/5/12
592	Breeching inlet pipes	75 days	Thu 8/3/12	Tue 19/6/12
593	Breeching inlet boxes	21 days	Wed 20/6/12	Wed 18/7/12
594	**AUTOMATIC FIRE ALARM SYSTEM**	**126 days**	**Thu 26/1/12**	**Wed 18/7/12**
595	Fire resistant signal cables	30 days	Thu 26/1/12	Wed 7/3/12
596	Sub fire alarm panels	21 days	Wed 2/5/12	Tue 29/5/12
597	Main fire alarm indicator	14 days	Wed 30/5/12	Mon 18/6/12
598	Heat/ Smoke detectors	30 days	Thu 7/6/12	Wed 18/7/12
599	Digital communication DECAM	14 days	Fri 11/5/12	Tue 29/5/12
600	**FIRE HOSEREEL SYSTEM**	**285 days**	**Tue 30/8/11**	**Wed 29/8/12**
601	Fire hosereel pipes	120 days	Tue 30/8/11	Thu 12/1/12
602	Swivel type fire hosereel	60 days	Fri 6/4/12	Wed 27/6/12
603	Hosereel pumps & access.	45 days	Thu 28/6/12	Wed 29/8/12
604	**DRY RISER SYSTEM**	**270 days**	**Tue 30/8/11**	**Wed 8/8/12**
605	Dry riser main to roof	240 days	Tue 30/8/11	Wed 27/6/12



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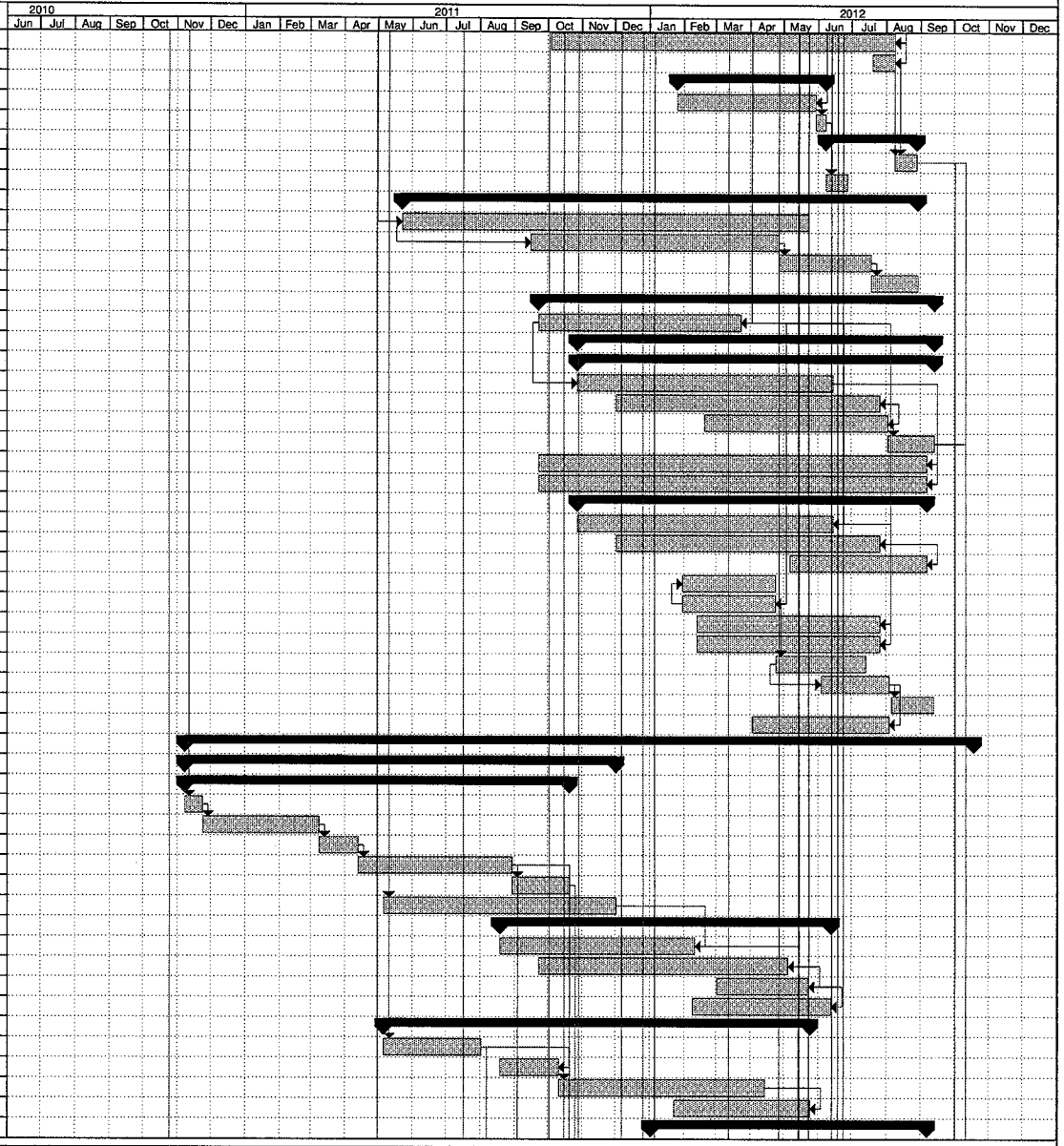
Task | Milestone | Project Summary | External Milestone | Critical Task
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REVISION 2

TERRENE AT BUKIT TIMAH
CONSTRUCTION PROGRAMME

UNISON CONSTRUCTION PTE LTD
CONTRACT PERIOD: 16/08/2010 - 15/02/2013

ID	Task Name	Duration	Start	Finish
606	Landing valves for dry riser system	240 days	Tue 4/10/11	Wed 8/8/12
607	Breeching inlet for dry rising mains	14 days	Fri 20/7/12	Wed 8/8/12
608	**FIRE HYDRANT SYSTEM**	**97 days**	**Thu 26/1/12**	**Thu 7/6/12**
609	Underground pipe works	90 days	Thu 26/1/12	Tue 29/5/12
610	Fire hydrant	7 days	Wed 30/5/12	Thu 7/6/12
611	**T&C FIRE PROTECTION**	**58 days**	**Fri 8/6/12**	**Tue 28/8/12**
612	T& C & Fire Protection System	14 days	Thu 9/8/12	Tue 28/8/12
613	T&C of Fire Hudrant	14 days	Fri 8/6/12	Wed 27/6/12
614	**SWIMMING POOL & WATER FEATURE FILTRATION AND CIRCULATION SYS**	**370 days**	**Mon 23/5/11**	**Wed 29/8/12**
615	Concealed pipes works	300 days	Mon 23/5/11	Wed 23/5/12
616	Pipe work from overflow channel to balancing tank to pump room	180 days	Fri 16/9/11	Thu 26/4/12
617	Filtration pump, equipment & acces.	60 days	Fri 27/4/12	Wed 18/7/12
618	Control Panels, DBs	30 days	Thu 19/7/12	Wed 29/8/12
619	**BASEMENT WORKS**	**275 days**	**Fri 23/9/11**	**Thu 13/9/12**
620	Ceiling & Wall plastering	150 days	Fri 23/9/11	Fri 23/3/12
621	**ACMV WORKS**	**245 days**	**Fri 28/10/11**	**Thu 13/9/12**
622	**DUCTLESS EXHAUST SYSTEM**	**245 days**	**Fri 28/10/11**	**Thu 13/9/12**
623	Duct work	180 days	Fri 28/10/11	Thu 14/6/12
624	Fans,	180 days	Fri 2/12/11	Thu 26/7/12
625	Controls	120 days	Mon 20/2/12	Thu 2/8/12
626	T&C	30 days	Fri 3/8/12	Thu 13/9/12
627	Cold water distribution	270 days	Fri 23/9/11	Thu 6/9/12
628	Gas pipe distribution	270 days	Fri 23/9/11	Thu 6/9/12
629	**ELECTRICAL INSTALLATION**	**240 days**	**Fri 28/10/11**	**Thu 6/9/12**
630	Submain cables from MSB to EMSB	180 days	Fri 28/10/11	Thu 14/6/12
631	Cabling works to common area lighting & power	180 days	Fri 2/12/11	Thu 26/7/12
632	Common Area light fittings	90 days	Mon 7/5/12	Thu 6/9/12
633	Refuse Chamber	60 days	Tue 31/1/12	Mon 23/4/12
634	Column Guard	60 days	Tue 31/1/12	Mon 23/4/12
635	Basement Lift Lobbies	120 days	Mon 13/2/12	Thu 26/7/12
636	M&E Rooms	120 days	Mon 13/2/12	Thu 26/7/12
637	Carpark Scupper drains	60 days	Tue 24/4/12	Fri 13/7/12
638	Hardener to carpark	45 days	Mon 4/6/12	Fri 3/8/12
639	Carpark line painting	28 days	Mon 6/8/12	Wed 12/9/12
640	Signage	90 days	Tue 3/4/12	Fri 3/8/12
641	**EXTERNAL WORKS**	**575 days**	**Mon 8/11/10**	**Thu 18/10/12**
642	**CE DRAIN & INTERNAL DRAIN**	**335 days**	**Mon 8/11/10**	**Thu 1/12/11**
643	**EXTERNAL ROADSIDE DRAIN**	**299 days**	**Mon 8/11/10**	**Thu 20/10/11**
644	Demolish Existing Drain along Toh Tuck Drive	14 days	Mon 8/11/10	Tue 23/11/10
645	CE Drain Construction along Toh Tuck Drive/Road	90 days	Wed 24/11/10	Tue 8/3/11
646	Demolish Existing Drain along Toh Tuck Road & Make Good	30 days	Wed 9/3/11	Tue 12/4/11
647	CE Drain Construction along Jalan Jurong Kechil	120 days	Wed 13/4/11	Mon 29/8/11
648	Demolish Existing Drain along Jalan Jurong Kechil & Make Good	45 days	Tue 30/8/11	Thu 20/10/11
649	Internal Surface Drain	180 days	Fri 6/5/11	Thu 1/12/11
650	**DRIVEWAY/ FIRE ENGINE ACCESS**	**238 days**	**Fri 19/8/11**	**Tue 12/6/12**
651	Underground Services	150 days	Fri 19/8/11	Fri 10/2/12
652	Road Base Construction	180 days	Fri 23/9/11	Fri 4/5/12
653	Drain Cell Construction	60 days	Fri 2/3/12	Wed 23/5/12
654	Driveway/Fire Engine Access Finishes	90 days	Thu 9/2/12	Tue 12/6/12
655	**LAP POOL/ CHILDREN WADING POOL/ JACUZZI**	**315 days**	**Fri 6/5/11**	**Thu 24/5/12**
656	Concrete structure	75 days	Fri 6/5/11	Mon 1/8/11
657	Waterproofing system	45 days	Fri 19/8/11	Mon 10/10/11
658	Finishes	150 days	Tue 11/10/11	Fri 13/4/12
659	Timber Deck	90 days	Mon 23/1/12	Thu 24/5/12
660	**WATERFALL GARDEN**	**180 days**	**Mon 2/1/12**	**Thu 6/9/12**



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Date: 14/10/2010

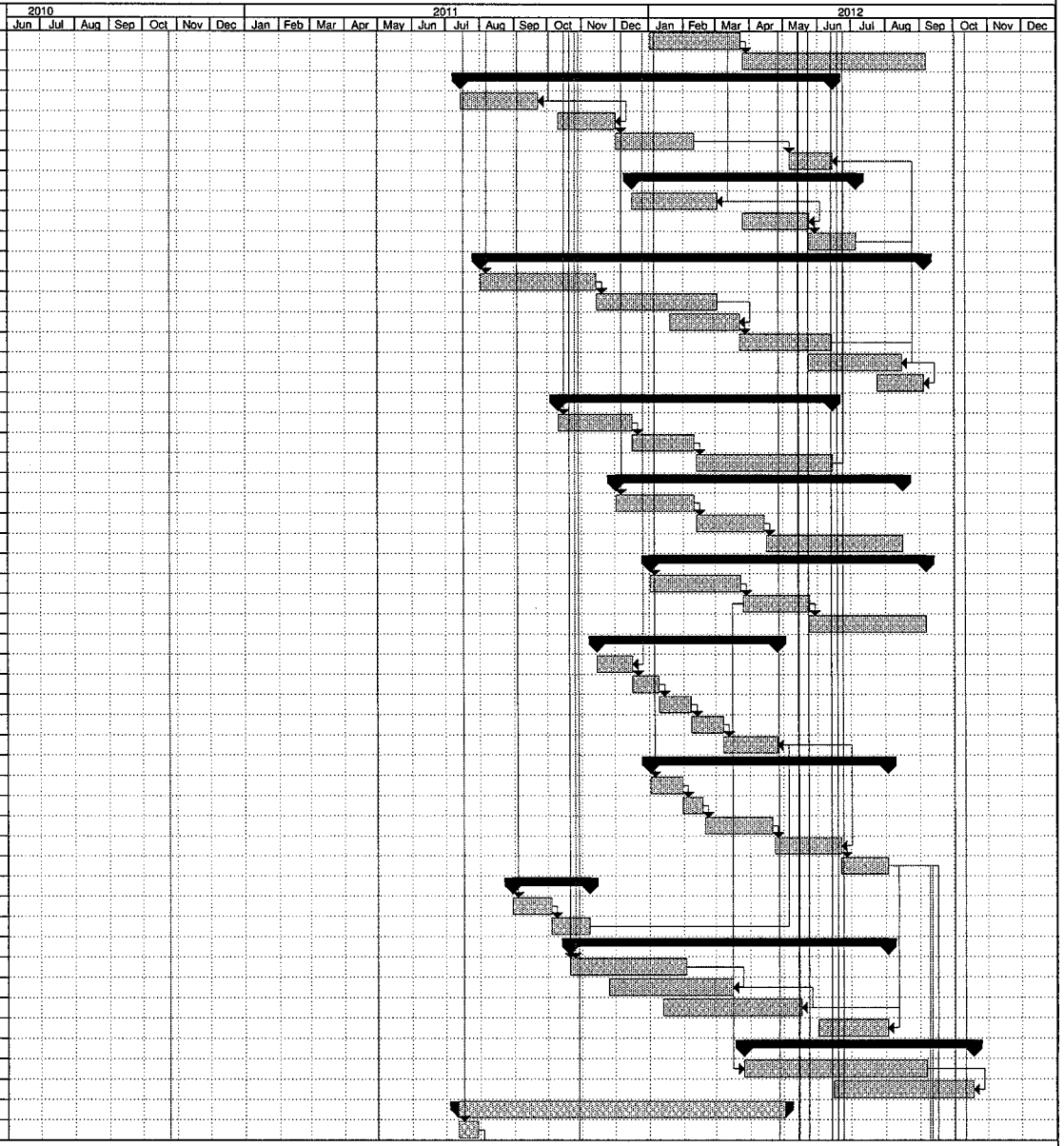
Task | Milestone | Project Summary | External Milestone | Critical Task
Progress | Summary | External Tasks | Deadline

REVISION 2

TERRENE AT BUKIT TIMAH
CONSTRUCTION PROGRAMME

UNISON CONSTRUCTION PTE LTD
CONTRACT PERIOD: 16/08/2010 - 15/02/2013

ID	Task Name	Duration	Start	Finish
661	Wateproofing system	60 days	Mon 2/1/12	Fri 23/3/12
662	Finishes	120 days	Mon 26/3/12	Thu 6/9/12
663	**PAVILION/ BBQ CORNER**	**270 days**	**Fri 15/7/11**	**Thu 14/6/12**
664	Concrete Structure	60 days	Fri 15/7/11	Thu 22/9/11
665	Roof finishes	45 days	Tue 11/10/11	Thu 1/12/11
666	Floor Finishes	60 days	Fri 2/12/11	Fri 10/2/12
667	BBQ Grilles	30 days	Mon 7/5/12	Thu 14/6/12
668	**BIRD'S NEST/ CHILDREN PLAY AREA**	**150 days**	**Sat 17/12/11**	**Thu 5/7/12**
669	Structure	60 days	Sat 17/12/11	Fri 2/3/12
670	Rubber Mat	45 days	Mon 26/3/12	Thu 24/5/12
671	Play Equipment	30 days	Fri 25/5/12	Thu 5/7/12
672	**FUNCTION ROOM/ GYM**	**313 days**	**Tue 2/8/11**	**Tue 4/9/12**
673	Structures	90 days	Tue 2/8/11	Mon 14/11/11
674	Walls, Windows and doors	90 days	Tue 15/11/11	Fri 2/3/12
675	Roof Finishes and Rain water goods	45 days	Fri 20/1/12	Thu 22/3/12
676	External finishes	60 days	Fri 23/3/12	Wed 13/6/12
677	Inernal finishes	60 days	Thu 24/5/12	Wed 15/8/12
678	Gym Equipment	30 days	Wed 25/7/12	Tue 4/9/12
679	**WATER TERRACE/ WATER SCAPE**	**195 days**	**Tue 11/10/11**	**Thu 14/6/12**
680	Structures	60 days	Tue 11/10/11	Fri 16/12/11
681	Waterproofing system	45 days	Sat 17/12/11	Fri 10/2/12
682	Internal/External finishes	90 days	Mon 13/2/12	Thu 14/6/12
683	**SCULPTURE GARDEN**	**195 days**	**Fri 2/12/11**	**Thu 16/8/12**
684	Structures	60 days	Fri 2/12/11	Fri 10/2/12
685	Waterproofing system	45 days	Mon 13/2/12	Fri 13/4/12
686	Internal/External finishes	90 days	Mon 16/4/12	Thu 16/8/12
687	**WATER FEATURE/ DROP-OFF AREA**	**180 days**	**Mon 2/1/12**	**Thu 6/9/12**
688	Structures	60 days	Mon 2/1/12	Fri 23/3/12
689	Waterproofing system	45 days	Mon 26/3/12	Thu 24/5/12
690	Internal/External/ Roof finishes	75 days	Fri 25/5/12	Thu 6/9/12
691	**BIN CENTRE**	**128 days**	**Tue 15/11/11**	**Wed 25/4/12**
692	Structures	30 days	Tue 15/11/11	Fri 16/12/11
693	Roof finishes and rain water goods	21 days	Sat 17/12/11	Mon 9/1/12
694	Walls, windows & door	21 days	Tue 10/1/12	Tue 7/2/12
695	External finishes	21 days	Wed 8/2/12	Wed 7/3/12
696	Internal Finishes	35 days	Thu 8/3/12	Wed 25/4/12
697	**GUARD HOUSE**	**155 days**	**Mon 2/1/12**	**Thu 2/8/12**
698	Structures	21 days	Mon 2/1/12	Mon 30/1/12
699	Roof finishes and rain water goods	14 days	Tue 31/1/12	Fri 17/2/12
700	Walls, windows/ door & M&E Control Panels	45 days	Mon 20/2/12	Fri 20/4/12
701	External finishes	45 days	Mon 23/4/12	Thu 21/6/12
702	Internal Finishes	30 days	Fri 22/6/12	Thu 2/8/12
703	**ENTRANCE CULVERT**	**60 days**	**Tue 30/8/11**	**Mon 7/11/11**
704	Construction of base	30 days	Tue 30/8/11	Mon 3/10/11
705	Culvert /Box drain construction	30 days	Tue 4/10/11	Mon 7/11/11
706	**BOUNDARY WALL**	**221 days**	**Fri 21/10/11**	**Thu 2/8/12**
707	Concrete Structures	90 days	Fri 21/10/11	Thu 2/2/12
708	Brickwalls	90 days	Fri 25/11/11	Thu 15/3/12
709	Finishes	90 days	Fri 13/1/12	Wed 16/5/12
710	Gates	45 days	Fri 1/6/12	Thu 2/8/12
711	**SOFTSCAPE WORKS**	**150 days**	**Mon 26/3/12**	**Thu 18/10/12**
712	E Deck Planter	120 days	Mon 26/3/12	Thu 6/9/12
713	Green Buffer & Planting Strips	90 days	Fri 15/6/12	Thu 18/10/12
714	**ELECTRICAL SUBSTATION**	**240 days**	**Tue 12/7/11**	**Tue 1/5/12**
715	RC Piling Works	18 days	Tue 12/7/11	Fri 29/7/11



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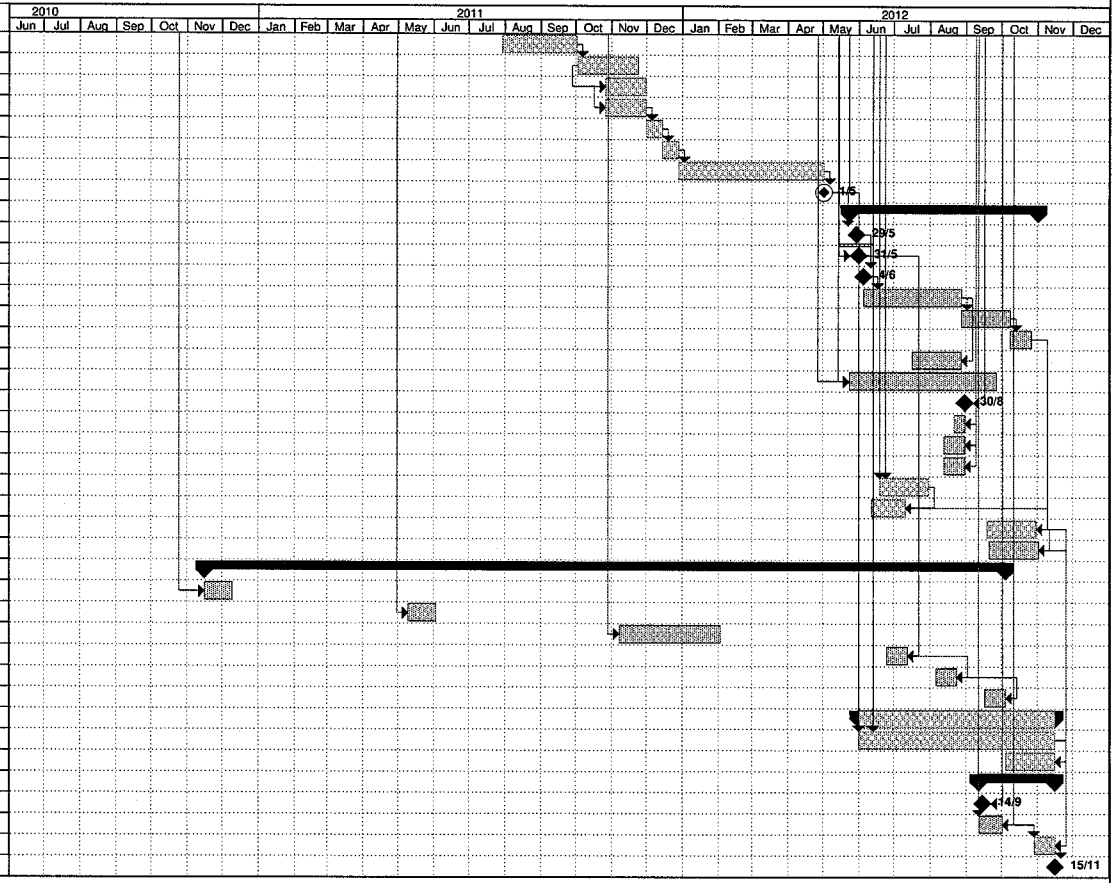
Task | Milestone | Project Summary | External Milestone | Critical Task
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REVISION 2

TERRENE AT BUKIT TIMAH
CONSTRUCTION PROGRAMME

UNISON CONSTRUCTION PTE LTD
CONTRACT PERIOD: 16/08/2010 - 15/02/2013

ID	Task Name	Duration	Start	Finish
716	Concrete structures	55 days	Sat 30/7/11	Sat 1/10/11
717	Roof finishes and rain water goods	45 days	Mon 3/10/11	Wed 23/11/11
718	External finishes	30 days	Thu 27/10/11	Wed 30/11/11
719	Internal finishes	30 days	Thu 27/10/11	Wed 30/11/11
720	Access hatch/railing/grab bars	14 days	Thu 1/12/11	Wed 14/12/11
721	Handover of Substation to Power Grid	14 days	Thu 15/12/11	Wed 28/12/11
722	Power Grid's Work in substation	90 days	Thu 29/12/11	Tue 1/5/12
723	**Powergrid Turn-On (Substation)**	0 days	Tue 1/5/12	Tue 1/5/12
724	**PRE TOP INSPECTION**	**116 days**	**Thu 24/5/12**	**Thu 1/11/12**
725	Power turn on to Consumer Main LV Switchboard	0 days	Tue 29/5/12	Tue 29/5/12
726	Power turn on to Electrical Riser for Apartment Blocks	0 days	Thu 31/5/12	Thu 31/5/12
727	Handover of MDF Room to Singtel & Starhub	0 days	Mon 4/6/12	Mon 4/6/12
728	Internal Unit Testing of Electrical System	60 days	Tue 5/6/12	Mon 27/8/12
729	Eletrical Sub-meter installation	30 days	Tue 28/8/12	Mon 8/10/12
730	Testing by SP services	14 days	Tue 9/10/12	Fri 26/10/12
731	Obtain Certificate for Broadband readiness	30 days	Tue 17/7/12	Mon 27/8/12
732	Internal Unit Testing of ACMV System	90 days	Thu 24/5/12	Wed 26/9/12
733	Application for DECAM	0 days	Thu 30/8/12	Thu 30/8/12
734	FFAI Inspection	7 days	Wed 22/8/12	Thu 30/8/12
735	ACMVI Inspection	14 days	Mon 13/8/12	Thu 30/8/12
736	Ductless MV System for Basement Carpark	14 days	Mon 13/8/12	Thu 30/8/12
737	Sanitary Inspection	30 days	Tue 19/6/12	Mon 30/7/12
738	Water Turn On Inspection	21 days	Tue 12/6/12	Tue 10/7/12
739	Water Sub-Meter Installtion	30 days	Wed 19/9/12	Tue 30/10/12
740	Gas Turn On Inspection	30 days	Fri 21/9/12	Thu 1/11/12
741	**STOREY SHELTER INSPECTION AND COMMISSIONING**	**558 days**	**Tue 16/11/10**	**Thu 4/10/12**
742	BCA Structural RC Inspection to Basement/ 1st Storey	21 days	Tue 16/11/10	Thu 9/12/10
743	BCA Structural RC Inspection to Typical Storey	21 days	Tue 10/5/11	Thu 2/6/11
744	BCA Storey Shelter Mock-Up Inspection	75 days	Tue 8/11/11	Thu 2/2/12
745	BCA Storey Shelter Inspection #01	14 days	Mon 25/6/12	Thu 12/7/12
746	BCA Storey Shelter Inspection #02	14 days	Mon 6/8/12	Thu 23/8/12
747	BCA/ FSSD Storey Shelter Inspection #03	14 days	Mon 17/9/12	Thu 4/10/12
748	**OTHER WORKS**	**120 days**	**Fri 1/6/12**	**Thu 15/11/12**
749	Quality Mark Assessment / Handing Over Apartment Units	120 days	Fri 1/6/12	Thu 15/11/12
750	Final As Built Submission after Practical Completion	30 days	Fri 5/10/12	Thu 15/11/12
751	**TOP**	**47 days**	**Wed 12/9/12**	**Thu 15/11/12**
752	Pre-RI Inspection	0 days	Fri 14/9/12	Fri 14/9/12
753	RI Inspection (Arch and M&E)	14 days	Wed 12/9/12	Mon 1/10/12
754	BCA Inspection	14 days	Mon 29/10/12	Thu 15/11/12
755	Obtain TOP	0 days	Thu 15/11/12	Thu 15/11/12



Prepared by: Tan Thiam Huat
Date: 14/10/2010

Task | Milestone | Project Summary | External Milestone | Critical Task
Progress | Summary | External Tasks | Deadline

REVISION 2

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	5/10/09	5/2/10							11/2/10
Power Supply Substation	SP PowerGrid Ltd	30/6/10	29/9/10	18/10/10						
Metering Layout	SP Services Ltd									
Sanitary Installation	PUB Water Reclamation (Network) Dept	15/4/11								
Domestic Water Supply	PUB (Water Supply) Network Dept	15/3/11								
Gas Supply Installation	City Gas Pte Ltd	15/2/11								
Air Conditioning & Ventilation Inst.	FSSD	30/6/11								
Fire Fighting & Alarm Installation	FSSD	16/5/11								
Telephone Installation	TFCC	30/8/10	3/11/10	10/11/10	19/11/10					21/12/10
Broadband Co-axial Cable System (BCS)	Starhub Cable Vision									
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/ Clearance
		Scheduled	Actual	Comment	Resubmit	Comment	Resubmit	Comment	Resubmit	
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:	
- EC/MC	✓				
- PP	✓				

(✓*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	YYF
Incoming Architectural Sketches/Details	YYF
Incoming Structural Drawings	YYF
M&E Drawings - Electrical Installation	CWT
- Lift & Escalator Installation	CWT
- Air Conditioning & Ventilation Installation	YYF
- Fire Fighting & Alarm Installation	YYF
- Plumbing & Sanitary Installation	YYF
- Swimming Pool & Filtration Installation	YYF
Other Drawings	
- Landscape Drawing	CWT
- FSSD Approval Building Plan	YYF

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

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 Questionnaires	✓	✓			
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 – NOT USED

ITEM	KEPT BY

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~~
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

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	Gold Plus
Green Design Features	Refer to attached

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

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	✓

Information for Green Mark Info-Portal @ www.greenmark.sg

All information inputted in this appendix will be made available to public

a) Description of Project: (types of use, size, no. of storey, location etc)

*Description is for publicity and is not the formal BP project description. It should be in structured sentence format limited to 3-4 sentences.

b) Summary of Green Features

Estimated energy savings (kwh/yr)	
Estimated water savings (m^3/yr)	8,719.68 m^3/yr
List of other prominent green features (Please include soft copy images of green features if available)	
1. Inverter and environmentally friendly air conditioner split units with 4 NEA 'ticks' green label are used in all apartment units and common areas (such as lift lobbies in the basement, gym room, function room, management office, guardhouse & MDF room) 2. Energy efficient PLC or T5 lamps are used at lobbies, staircases, car parks, gym room, function room, management office, guardhouse & MDF room. 3. Energy efficient LED is used at landscape. 4. Alternate circuiting and timer control for lights at lobbies, staircases, car parks, gym room, function room, management office and landscape 5. Variable frequency variable voltage (VVVF) drive lifts with lights and fans in the lift cars switched off when there is no hall call after a predetermined time delay. 6. Basement car-parks are provided with 2.5% openings for natural intake and CO sensors to control ductless exhaust system. 7. Mechanical ventilation fans for basement car park & lift lobbies, domestic water transfer pumps and booster pumps are controlled by variable speed drive (VSD). 8. Automatic flushing cistern for the handicapped toilet. 9. Dual flush cistern for WC an d all basin, sink & shower mixer taps in apartment unit toilets and clubhouse changing rooms/toilets are fitted with constant flow regulator. 10. Collecting rainwater to irrigate plants.	

Note: A rough guide for number of features – 3 (Certified and Gold), 5 (GoldPlus), 7 (Platinum) (To be arranged in the order of criteria). Additional green features that exceed the above stated number may not be published. Each green feature cannot be more than 25 words long.

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

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	A
M&E Cost Estimate Report	A
Pre-Qualification of Tenderers	NA
Tender Documents	A
Tender Report	NA
Payment Valuation for QS	NA
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