Tin Shui Wai Area 31 Phase 1
Static Calculations for Piling Design of Block 1

Extracts from Franki (B+B)'s letter dated 30 July 1996

CALCULATION OF ULTIMATE RESISTANCE OF PERCAST-PRESTRESSED CONCRETE PILES USING STATIC FORMULA

Reference book : Foundation Design and Construction 5th edition by M J Tomlinson (1986)

Project Title: TIN SHUI WAI AREA 31 PH 1 BLOCK 1

DATE : 30-07-96

Pile Diameter : .50m

Peak value for End Bearing = 22000.00 KN/m^2

Reference Bore-hole: A31-100

Water level from proposed ground = 3.000 m

Cut-off level from proposed ground = 3.000 m

Angle of wall friction/Angle of shear resistance = .75

Soil Layer	Soil Type	Depth From m	Depth To m	Angle of friction	Bulk Density KN/m^2	Nq	Ks	Corr. Factor
1	FILL	.00	3.00	35.00	18.00	70.00	1.25	.98
2	POND DEPOSIT	3.00	7.00	30.70	19.00	28.00	1.25	.98
3	ALLUV. CLAY	7.00	11.00	30.30	19.00	20.00	1.75	.98
4	C.D. Volcani	11.00	19.00	34.00	20.00	40.00	2.00	.98
5	C.D. Volcani	19.00	23.50	34.00	20.00	38.00	2.00	.98
6								
7								
8								

A31-100

Conclusion :

Depth	Skin Friction KN	Acc. Skin Friction KN	NET End Bearing KN	Ultimate Resistance KN
.00	0	0	0	0
.50	0	0	0	0
1.00	0	0	0	0
1.50	0	0	0	0
2.00	0	0	0	0
2.50	0	0	0	0
3.00	0	0	0	0
3.50	23	23	321	344
4.00	25	48	346	394
4.50	27	74	371	445
5.00	28	103	396	499
5.50	30	133	420	554
6.00	32	165	445	611
6.50	34	199	470	669
7.00	36	235	353	589
7.50	52	287	371	658
8.00	55	342	389	730
8.50	57	399	406	805
9.00	60	458	424	882
9.50	62	521	442	962
10.00	65	585	459	1044
10.50	67	652	477	1129
11.00	70	722	989	1711
11.50	94	816	1028	1845
12.00	98	914	1068	1982
12.50	102	1016	1107	2123
13.00	105	1121	1146	2267
13.50	109	1230	1185	2415
14.00	113	1343	1225	2567
14.50	116	1459	1264	2723
15.00	120	1579	1303	2882
15.50	124	1702	1342	3045
16.00	127	1830	1382	3211
16.50	131	1961	1421	3381
17.00	135	2095	1460	3555
17.50	138	2233	1499	3733
18.00	142	2375	1539	3914
18.50	146	2521	1578	4099
19.00	149	2670	1536	4206
19.50	153	2823	1574	4397
20.00	157	2980	1611	4591
20.50	160	3140	1648	4788
21.00	164	3304	1685	4989
21.50	168	3471	1723	5194
22.00	171	3643	1760	5403

Static Calculations for Piling Design of Block 1

Extracts from Franki (B+B)'s letter dated 16 August 1996

CALCULATION OF ULTIMATE RESISTANCE OF PERCAST-PRESTRESSED
CONCRETE PILES USING STATIC FORMULA

Reference book : Foundation Design and Construction 5th edition
by M J Tomlinson (1986)

Project Title: TIN SHUI WAI AREA 31 PH 1 BLOCK 1

DATE : 01-08-96

Pile Diameter : .50m

Peak value for End Bearing = 22000.00 KN/m^2

Reference Bore-hole: A31-100

Water level from proposed ground = 3.000 m

Skin friction measured below ground = 7.500 m

Cut-off level from proposed ground = 3.000 m

Angle of wall friction/Angle of shear resistance = .75

Soil Layer	Soil Type	Depth From m	Depth To m	Angle of friction	Bulk Density KN/m^2	Nq	Ks	Corr. Factor
1	FILL	.00	3.00	35.00	18.00	70.00	1.25	.98
2	POND DEPOSIT	3.00	7.00	30.70	19.00	28.00	1.25	.98
3	ALLUV. CLAY	7.00	11.00	30.30	19.00	20.00	1.75	.98
4	C.D. Volcanic	11.00	23.00	34.00	20.00	46.00	2.00	.98
5								
6								
7								
8								

A31-100
Conclusion :

Depth	Skin Friction KN	Acc. Skin Friction KN	NET End Bearing KN	Ultimate Resistance KN
.00	0	0	0	0
.50	0	0	0	0
1.00	0	0	0	0
1.50	0	0	0	0
2.00	0	0	0	0
2.50	0	0	0	0
3.00	0	0	0	0
3.50	0	0	0	0
4.00	0	0	0	0
4.50	0	0	0	0
5.00	0	0	0	0
5.50	0	0	0	0
6.00	0	0	0	0
6.50	0	0	0	0
7.00	0	0	0	0
7.50	0	0	0	0
8.00	55	55	392	447
8.50	58	113	410	523
9.00	60	173	428	601
9.50	63	236	446	682
10.00	65	301	464	765
10.50	68	369	482	851
11.00	71	439	1151	1590
11.50	95	535	1197	1732
12.00	99	634	1243	1877
12.50	103	737	1289	2026
13.00	107	843	1335	2179
13.50	110	954	1381	2335
14.00	114	1068	1427	2495
14.50	118	1186	1473	2659
15.00	122	1307	1519	2827
15.50	125	1433	1565	2998
16.00	129	1562	1611	3173
16.50	133	1694	1657	3352
17.00	137	1831	1703	3534
17.50	140	1971	1750	3721
18.00	144	2115	1796	3911
18.50	148	2263	1842	4105
19.00	151	2414	1888	4302
19.50	155	2570	1934	4503
20.00	159	2729	1980	4708
20.50	163	2891	2026	4917
21.00	166	3058	2072	5130
21.50	170	3228	2118	5346
22.00	174	3402	2164	5566

Source of information: Housing Department