SEWTECH FASHIONS LIMITED

SFB-10, Factory Building, Factory Bay Area, CEPZ, Chattogram
(22.291352, 91.778089)
15 December 2022

RSC RMG SUSTAINABILITY COUNCIL

Buildings Information

1. SFB#10 Factory Building (G+5)
2. Utility Building (single storied)
3. Fire Pump Room (single storied)

RSC RMG SUSTAINABILITY COUNCIL

Observations

Inconsistences in design report

Observation: SFB#10 Factory Building

Table 5.1.1: Pile Capacity Check for 125 psf Live Load

Joint Label	Pile Cap Type	Provided Number of Pile	Allowable Pile Capacity	FoS (From Soil Test Report)	Ultimate Load Bearing Capacity	Reaction (DL + LL)	Available FoS (For Existing Foundation)	Remarks (Minimum FoS=2.5)
		Nos	kip		kip	kip		
1	PC9	9.0	71.63	3	1934.01	511.912	3.78	OK
2	PC12	12.0	71.63	3	2578.68	685.862	3.76	OK
3	PC13	13.0	71.63	3	2793.57	714.591	3.91	OK
4	PC13	13.0	71.63	3	2793.57	716.317	3.90	OK
5	PC13	13.0	71.63	3	2793.57	716.485	3.90	OK
6	PC13	13.0	71.63	3	2793.57	718.97	3.89	OK
7	PC13	13.0	71.63	3	2793.57	720.618	3.88	OK
8	PC13	13.0	71.63	3	2793.57	716.403	3.90	OK
9	PC13	13.0	71.63	3	2793.57	716.275	3.90	OK
10	PC13	13.0	71.63	3	2793.57	723.26	3.86	OK
11	PC11	11.0	71.63	3	2363.79	829.381	2.85	OK
12	PC11	11.0	71.63	3	2363.79	833.386	2.84	OK
13	PC4	4.0	71.63	3	859.56	224.607	3.83	OK
14	PC4	4.0	71.63	3	859.56	224.581	3.83	OK
15	PC5	5.0	71.63	3	1074.45	412.906	2.60	OK
16	PC5	5.0	71.63	3	1074.45	411.372	2.61	OK
17	PC13	13.0	71.63	3	2793.57	716.661	3.89	OK
18	PC13	13.0	71.63	3	2793.57	716.482	3.90	OK
19	PC13	13.0	71.63	3	2793.57	716.344	3.90	OK
20	PC13	13.0	71.63	3	2793.57	714.605	3.91	OK
21	PC13	13.0	71.63	3	2793.57	720.225	3.88	OK
22	PC13	13.0	71.63	3	2793.57	716.48	3.90	OK
23	PC13	13.0	71.63	3	2793.57	716.234	3.90	OK
24	PC13	13.0	71.63	3	2793.57	723.46	3.86	OK
25	PC12	12.0	71.63	3	2578.68	685.842	3.76	OK
26	PC9	9.0	71.63	3	1934.01	511.867	3.78	OK
27	PC8	8.0	71.63	3	1719.12	422.456	4.07	OK

Pile capacity considered 71.63 kip

Allowable pile capacity considered 71.63 kip in design report but no pile load test observed for this building. Whereas recommended pile capacity is 23.3 kip in geotechnical investigation report.

16.0 RECOMMENDATIONS:

Following Recommendations are Suggested *FOR THE CONSTRUCTION OF PROPOSED 06 (SIX)- STORIED FACTORY BUILDING SFB # 10 IN PLACE OF SS-02 AT CEPZ , P.S: EPZ, DISTRICT: CHITTAGONG, BANGLADESH*

R.C.C. PRE-CAST DRIVING PILE :

R.C.C pre-cast pre – stressed driving pile may be provided preferably from the depth of 5' ft and downwards , pile should be 14''x 14"inch And the embedment length up to 35' ft from the base level of footing considering carrying capacity of 10.20 tons per pile safely . 16" x16" Pre –cast pile carrying capacity 11.15 tons per pile safely.

CAST IN SITU PILE :

Bore Hole NO	Length below 3ft from EGL	20 inch dia cast-in situ pile	24 inch dia cast-in – situ pile
BH-5	135'-0"	85.0 ton	105.0 ton

N.B: It is suggested to perform the further at least two nos of S.P.T test up to hard STRATA for soil layer (approximate) 150'-0", for design CAST-IN-SITU Pile.

1 Tsf = 1.094 kg/cm² = 2 ksf, 1 Ton = 2000 lbs = 1000 kg = 9.96 kN, 1 m = 3.28ft, EGL = Existing Ground level & F.S. = Factor of Safety.

- **The designer may select any other alternative type, depth as well as the bearing capacity of the foundation in the light of information provided in this report.**
- Pile load test should be performed. If Pile load test is not performed then the value of pile capacity should be considered half.
- Foundation base should be kept dry during construction period.
- Grade beam (Tie beam) should be provided in any two orthogonal directions of each column at a suitable depth of foundation to minimize the differential settement of soil (BNBC).
- Foundation should be placed at original soil. If original soil is not found, the depth of foundation (Dr) shall be increased.

Engr. MD. Saiful Islam
B.Sc Engineer (Civil Engineering)
IEB Member No.-24108
The Institution of Engineer Bangladesh, Chittagong.

- 15 -

Allowable pile capacity considered 23.3 kip in geotechnical investigation report

Observation: SFB#10 Factory Building

Beam Id. In Drawing	Provided Reinf. At Top-Edge (in^2)	Required Reinf. (in^2)	Provided Reinf. At Middle-Bottom (in^2)	Required Reinf. (in^2)
B1	3.71	3.56	2.4	1.52
B2	3.36	4.23	2.9	1.68
B2A	4.32	4.09	3.36	1.79
B3	3.84	3.83	2.9	1.71
B4	4.45	4.34	2.9	1.97
B5	2.53	2.53	1.44	1.23
B6	3.84	3.60	3.67	1.92
B7	4.71	4.24	3.16	2.48
B8	3.84	3.22	1.92	1.51
B9	2.9	1.82	2.23	0.99
B10	1.44	0.59	1.44	0.87
B11	2.37	1.81	1.44	0.87

Few ground floor roof beams are marginally over stressed in terms of flexural condition and few beams are in marginal under stress condition. Building engineer is required to review the design of floor beams.

Observation: SFB#10 Factory Building

Crack on the floor finish of roof

Observation: SFB#10 Factory Building

Crack on the rooftop screeding. Building engineer is required to repair the crack with suitable repair method.

Observation: SFB#10 Factory Building

Construction safety practice in the factory premises

Observation: SFB#10 Factory Building

Lack of construction safety practice observed in the factory premises. Building engineer is required to follow all the construction safety practice according to Part 7, Chapter 3 of BNBC.

Observation: SFB#10 Factory Building

Priority Actions

Problems Observed

Item 01: Inconsistences in design report.

Item 02: Crack on the floor finish of roof.

Item 03: Construction safety practice in the factory premises.

Item No.	Observation	Recommended Action Plan	Recommended Timeline
01	Inconsistences in design report. (SFB#10 Factory Building)	Building engineer is required to review the design of pile adequacy and check the requirement of pile load test.	6-weeks
02	Inconsistences in design report. (SFB#10 Factory Building)	Building engineer is required to review the design of floor beams.	6-weeks
03	Inconsistences in design report. (SFB#10 Factory Building)	Carry out suggested remedial works where necessary.	6-months
04	Crack on the floor finish of roof. (SFB#10 Factory Building)	Building engineer is required to repair the crack with suitable repair method.	6-weeks
05	Construction safety practice in the factory premises. (SFB#10 Factory Building)	Building engineer is required to follow all the construction safety practice according to Part 7, Chapter 3.	6-weeks