

Fame Design Ltd. (New)

Lalpur, Fatullah, Narayangonj.
(23.633857, 90.478877)

10th December 2020

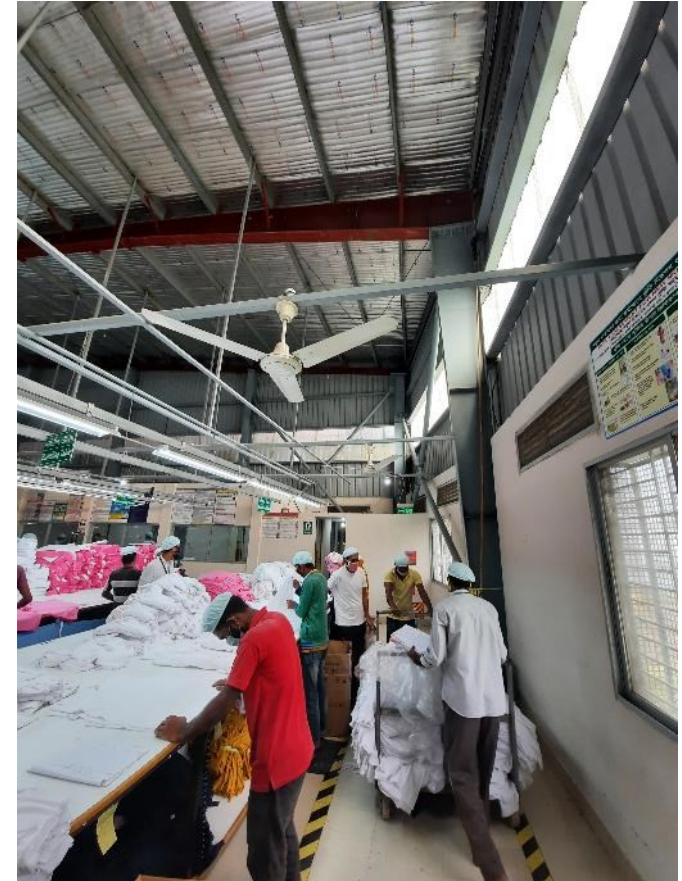


Buildings Information

1. Production Building (Building 1) (single storied)
2. Utility Building (Building 2) (G+1)

Observations

Absence of load transfer media in the long direction



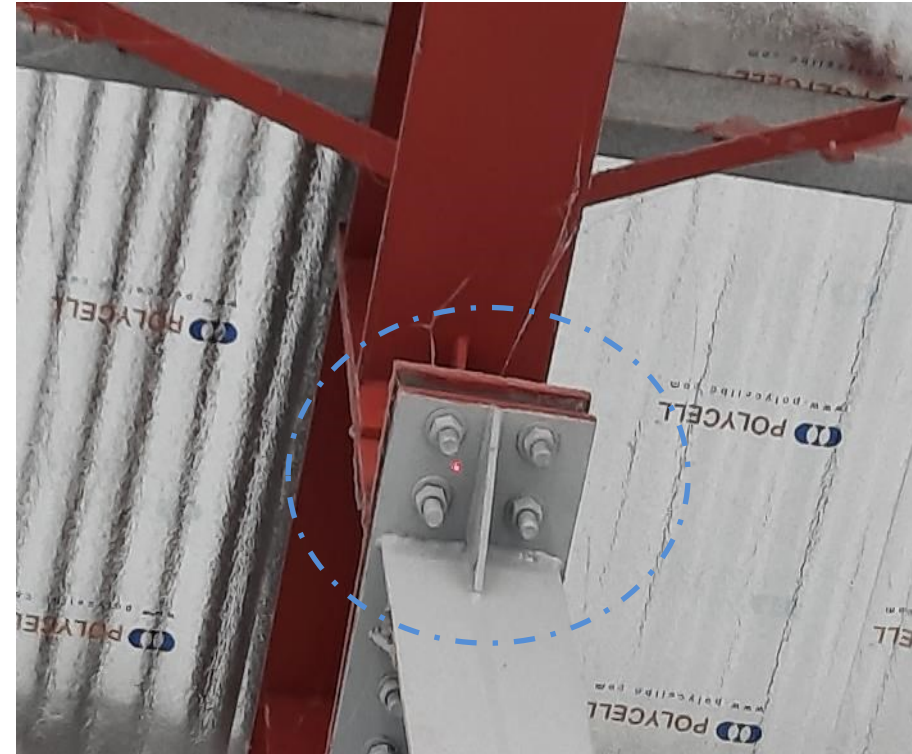
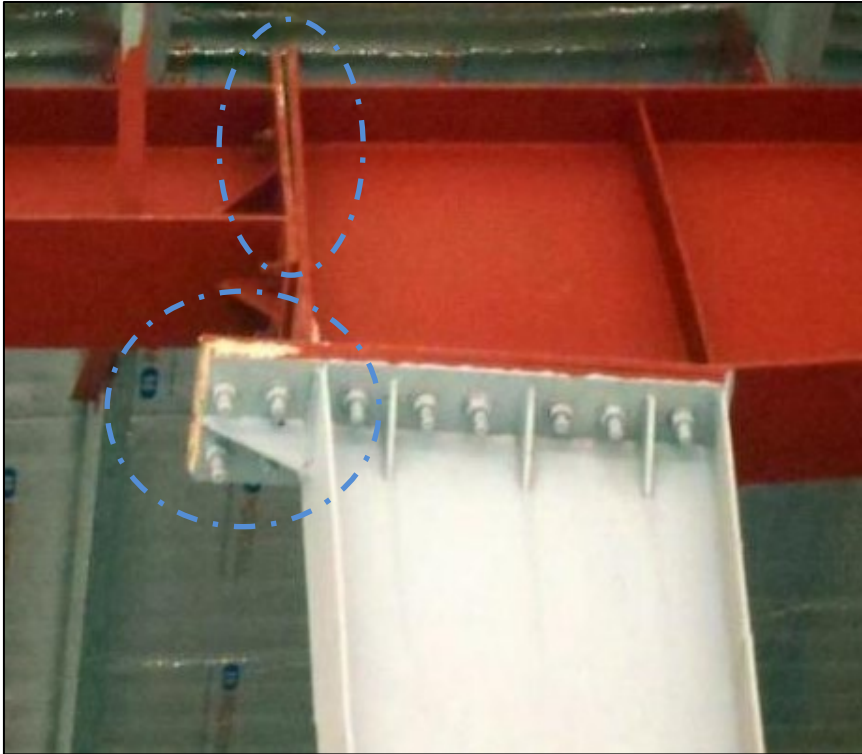
No compression strut/Load transfer media has been provided in the long direction. No design report was available on site. Building engineer is required to check the requirement of the any load transfer media in the long direction.

As per BNBC, every building or structure designed shall have its design documents prepared in accordance with the provision of Section 1.9.1. The design document shall include a design report, and a set of structural drawings, which shall be prepared in compliance with section 1.9.1.1 and section 1.9.1.2 as per BNBC. At the time of inspection, only as-built drawing, load plan and geotechnical report were available, but no design report was available which is required to be prepared in compliance with section 1.9.1.1 (part-6, BNBC).



No design report was available for Production Building

Connection gap between rafter joints



Connection gap was found between connecting plates of the rafters and columns. Building engineer is required to seal the gaps between connecting plates with proper repair methodology.

Footings are stressed above normal design limit.

16. RECOMMENDATION:

On the basis of aforesaid conclusion, the following recommendations are suggested for 1 (One) Storied Steel Structure Factory Building at Dag No.- 178, Khatian No.- 576, Hale- 625, Mouza- Fatulla, J. L. No.- 158, P. S.- Fatulla, Dist.- Narayanganj, Bangladesh.

SHALLOW FOUNDATION as Isolated column footing:

The averages bearings capacity of the Shallow Foundation as Isolated column footing may be considered in the following way:

- To be considered 0.65 Tsf (F. S. = 2.5) at a depth of 7.5ft measured from EGL each boring particularly at and around the test points for all borings.

R. C. CAST-IN-SITU PILE: (For all borings.)

The average bearing capacities (F. S. = 2.5) of different diameter pile with the embedment length up to 75ft from EGL of each boring may be considered as follows:

- 40 Ton for 16 inch dia pile.
- 50 Ton for 18 inch dia pile.
- 61 Ton for 20 inch dia pile.

Note:

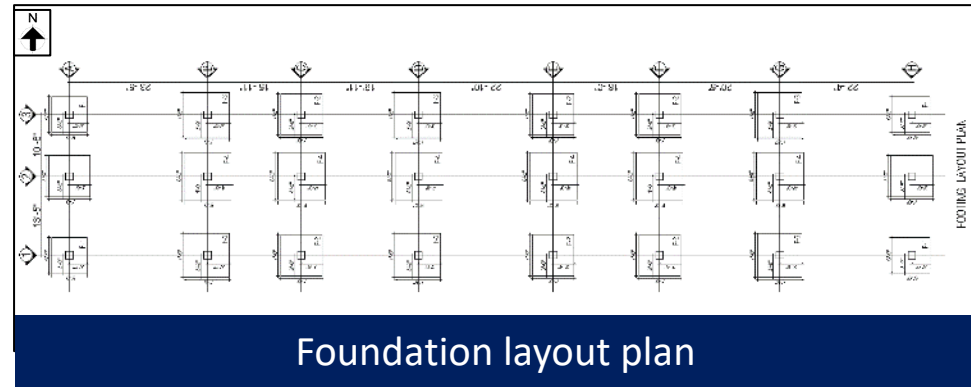
- $1 \text{ Tsf} = 1.094 \text{ Kg/cm}^2 = 2 \text{ ksf}$, $1 \text{ Ton} = 2000 \text{ lbs} = 9.87 \text{ kN}$,
 $1 \text{ m} = 3.28 \text{ ft}$, EGL = Existing Ground level & F. S. = Factor of Safety.
- The designer may select any others alternative type, depth as well as the bearing capacity of the foundation in the light of information provided in this report.
- Foundation base should be kept dry during construction period.
- Pile load test should be performed. If pile load test is not performed then value of pile capacity should be considered half.

14



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12/10/2018
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As per recommendation of geotechnical investigation report, the allowable bearing capacity is 0.65 tsf (7.1 ton/m^2) considering F.S 2.5.

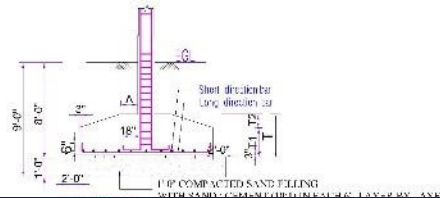


Foundation layout plan

FOOTING SCHEDULE

Footing of 2 storied building

FOOTING MARK	FOOTING SIZE	T1	T2	I	FOOTING REINFORCEMENT	
					short bar	long bar
F1	6'-0" x 8'-0"	12'	8'	15'	12@4' C/C	12@4' C/C
F2	7'-0" x 7'-0"	12'	8'	15'	12@4' C/C	12@4' C/C
F3	7'-6" x 7'-6"	12'	8'	18'	12@4' C/C	12@4' C/C
F4	8'-0" x 8'-0"	15'	8'	20'	16@5' C/C	16@5' C/C



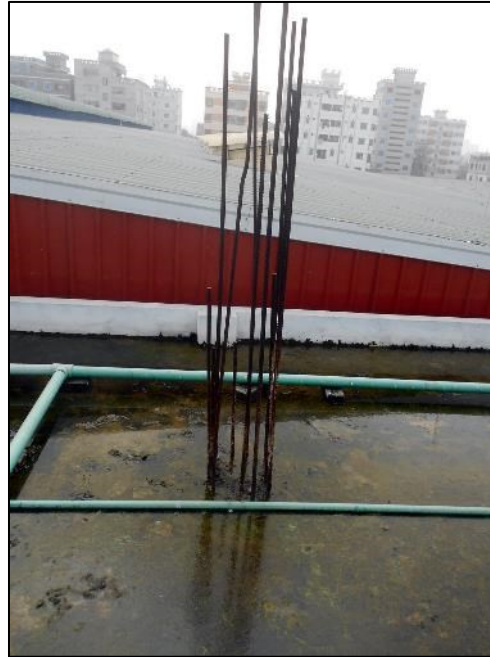
Foundation schedule & section



10000 liters water tank source of heavy loading

Cursory calculation indicates that footing appears to be stressed above normal design limits considering the recommended soil bearing capacity in geotechnical report and footing sizes in drawing. Factory engineer is required to review the adequacy of footings and comply with BNBC.

Exposed rebar at rooftop prone to corroded



Exposed reinforcement at roof level

Exposed reinforcement found left at roof level. Building engineer is required to remove the exposed rebar otherwise provide rust proof paint to protect from corrosion.

Water ponding & algae growth



Water ponding & algae growth observed on the rooftop. Building engineer is required to improve the roof drainage system and provide water proofing.

Priority Actions

Problems Observed

Production Building (Building 1)

Item 1: Absence of load transfer media in the long direction.

Item 2: Connection gap between rafter joints.

Utility Building (Building 2)

Item 3: Footings are stressed above normal design limit.

Item 4: Exposed rebar at rooftop prone to corroded.

Item 5: Water ponding & algae growth.

Item No.	Observation	Recommended Action Plan	Recommended Timeline
01	Absence of load transfer media in the long direction (Production Building)	Building engineer is required to check the requirement of the any load transfer media in the long direction.	6-weeks
02	Absence of load transfer media in the long direction (Production Building)	Building Engineer to prepare design report as per BNBC (part-6; Article 1.9.1) by reviewing design, loads and capacity of structural members.	6-weeks
03	Absence of load transfer media in the long direction (Production Building)	Complete implementation of any remedial works deemed necessary by the Design Report.	6-months
04	Connection gap between rafter joints. (Production Building)	Building engineer is required to seal the gaps between connecting plates with proper repair methodology.	6-weeks

Item No.	Observation	Recommended Action Plan	Recommended Timeline
05	Footings are stressed above normal design limit (Utility Building)	Building engineer is required to review the adequacy of footings and comply with BNBC.	6-weeks
06	Footings are stressed above normal design limit (Utility Building)	Building Engineer to prepare design report as per BNBC (part-6; Article 1.9.1) by reviewing design, loads and capacity of structural members.	6-weeks
07	Footings are stressed above normal design limit (Utility Building)	Produce and actively manage a loading plan for all floor plates within the factory Building considering floor, column and foundation capacity.	6-weeks
08	Footings are stressed above normal design limit (Utility Building)	Carryout remedial works where necessary.	6-months

Item No.	Observation	Recommended Action Plan	Recommended Timeline
09	Exposed rebar at rooftop prone to corroded (Utility Building)	Building Engineer is required to remove the corrosions and take preventive measures.	6-weeks
10	Water ponding & algae growth. (Utility Building)	Building engineer is required to improve the roof drainage system and apply water proofing.	6-weeks